Index to Contents of This Issue

Airports and Aviation
$64,800,000 in Airport Funds Reallotted 17
Airline Pilots Ask for Longer Runways 17
Airport Runway Lengths Proposed by CAA ... 17
Wheaton Uses New Type of Airmarker.. 107
Storm Sewer Design Aided by Aerial Topographic Mapping ... 108

Business Machines and Systems
A County Governed on Up-to-Date Budgetary Facts ... 90

Civic-Commercial Organizations
For the Community That Wants More Factory Payrolls ... 87

Civil Service
Public Servants Week ... 115

City Manager Plan
Bargains Available in Administrative Assistants for City Managers ... 94
Amateur Administration Was Expensive.. 101
Recent City Manager Appointments.... 133

Conferences and Conventions
International Housing and Planning Conference to Meet in Zurich ... 7
International Confe nce on Public Cleaning ... 15

Education
"Ye Ould Deluder, Satan" ... 7
Public Library Facilities to be Surveyed 79
Lectures Announced on Urban Decentralization ... 82
Buffalo Planning Association Sponsors Textbook on City ... 105

Equipment
What Makes a Truck? ... 77

Finance and Taxation
A County Governed by Up-to-Date Budgetary Facts ... 90
City Payroll-Income Tax Proves Its Workability ... 112
Municipal Bond Market ... 135

Food Conservation
Twenty Million Freedom Gardens Needed for 1948 ... 7

Government and Administration
Bargains Available in Administrative Assistants for City Managers ... 94
Amateur Administration was Expensive.. 101
Lynwood, Calif., Community Center 101
City Payroll-Income Tax Proves Its Workability ... 112
New Mayors Who Take Office January 1948 ... 115
Southern City Problems Surveyed by Questionnaire ... 115

Housing
International Housing and Planning Conference to Meet in Zurich ... 7

Industry and Community
For the Community That Wants More Factory Payrolls ... 87

Intergovernmental Cooperation
The American Municipal Association Reorganizes ... 110
Southern City Problems Surveyed by Questionnaire ... 115

International Relations
United Relief Campaign Requires Community Support ... 5

Interracial Relations
Interracial Relations and the Police 7

Laws and Legal Decisions
Legal Notes and Decisions ... 131
Zoning and Planning Notes ... 129

Libraries
Public Library Facilities to Be Surveyed 79

Lighting, Outdoor
Gering Lights Residential Streets ... 117
Fort Madison Wants More Light ... 119
From Moonlight to Street Lights ... 121
New Hood for Reflectors ... 121
Sodium Lighting on New London Bridge 121
Street Lighting Notes ... 121

News and Illustrations
Items from Manufacturers ... 145

Nuisances
Railroads Receive Smoke Awards ... 108

Parks
Kansas City Gets Green Light for Huge Improvement Program ... 5
Stockholm—the Park City ... 80

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THE MUNICIPAL INDEX AND ATLAS, used in connection with the current advertisements in THE AMERICAN CITY, places local officials in the most favorable position to obtain all types of available equipment and supplies from manufacturers who desire to serve municipal government departments. This 951-page annual is published by The American City Magazine Corporation, 470 Fourth Avenue, New York 16, N. Y.

Parking Facilities
Kansas City Gets Green Light for Huge Improvement Program ... 5
Ithica's Municipal Parking Lot Is Successful ... 127

Planning and Zoning
Public Works Officials Urge Comprehensive Planning ... 5
International Housing and Planning Conference to Meet in Zurich ... 7
Britain Curtails Work on New Towns ... 79
Stockholm—the Park City ... 80
Lectures Announced on Urban Decentralization ... 82
Buffalo Planning Association Sponsors Textbook on City ... 105
How Midland Has Profited by Planning 109
Southern City Problems Surveyed by Questionnaire ... 115
Zoning and Planning Notes ... 129

Power
Elroy Expands Municipal Diesel Plant.. 106

Public Relations
The City Tells Its Story ... 92
Public Servants Week ... 115

Public Safety
Fight Against Hotel Fires ... 13
High Point Pioneers Private Radio Communication ... 13
Miami Public Buildings Must Have Sprinkler Systems ... 13

Public Works
Public Works Officials Urge Comprehensive Planning ... 5
Cincinnati's Gunite Repair Program 100

Recreation
Kansas City Gets Green Light for Huge Improvement Program ... 5
Stockholm—the Park City ... 80
Lynwood, Calif., Community Center 101

Refuse
Department of Sanitation Exhibit for New York City's Golden Jubilee ... 15
International Conference on Public Cleansing ... 15
Refuse Detective Work ... 15
Houston, Texas, Builds Dual Incinerator 98

Sewerage and Sewage Treatment
Clean Waters Wins Honors ... 11
New Relationships Proposed to Evaluate Digester Performance ... 11
Sewage-Gas Production ... 11
Indianapolis Makes a Sewerage Analysis 96
A Sewer Retread Job ... 99
Storm Sewer Design Aided by Aerial Topographic Mapping ... 108

Street Cleaning and Snow Removal
Baltimore's Snow Removal Program.... 83

Street Construction and Maintenance
A Two-Way Improvement... 19
Kalamazoo Cuts Curb-and-Gutter Costs. 19
Maintenance Costs Up 58%... 19
Paris Builds Colored Streets... 19
Detroit Holds Paving Costs Down..... 89
Cincinnati's Gunite Repair Program 100
Tulsa's Street Program ... 102

Traffic and Transportation
Winnipeg Prefers Trolley Coaches..... 123
Improved City Transit or Urban Decline? 125
Ithaca's Municipal Parking Lot Is Successful ... 127

Water Supply and Purification
"Safe—and You Drink It" ... 9
Distribution Leaks and Meter Registration 9
A Convertible Softening Plant... 84
Cincinnati's Mill Creek Flood Control Program ... 86
Swimming Pool Turns Civilian ... 95
How Good Is the Delivered Water? 104
Edmonton Builds New Softening Plant.. 111

See pp. 21, 23, 24, 26, 30, 137, 139, 141, 143, 144 for catalogs and publications on municipal and civic subjects.

List of coming conventions, page 135 **Index to Advertisements, page 178**

1947

"Was that a Busy Year!"

We completed the largest construction program in our history—more than twice as large as any pre-war year.

A billion dollars was put into new facilities for the expansion and improvement of your telephone service.

2,700,000 new telephones were added to the Bell System—more than 10,000 every working day.

13,000,000 more calls a day were handled—a new record.

The telephone story of 1947 is one of expanding business, extraordinary building of new facilities, rising costs and higher payrolls.

It is the story of unceasing effort to meet the continuing demands for more and better telephone service.

BELL TELEPHONE SYSTEM

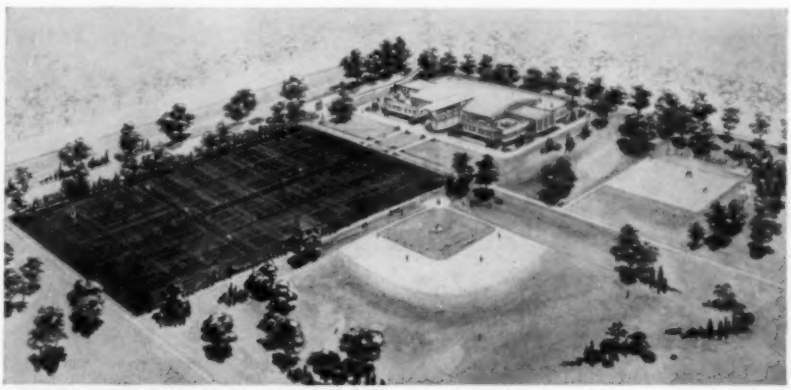
Our Municipal Notebook

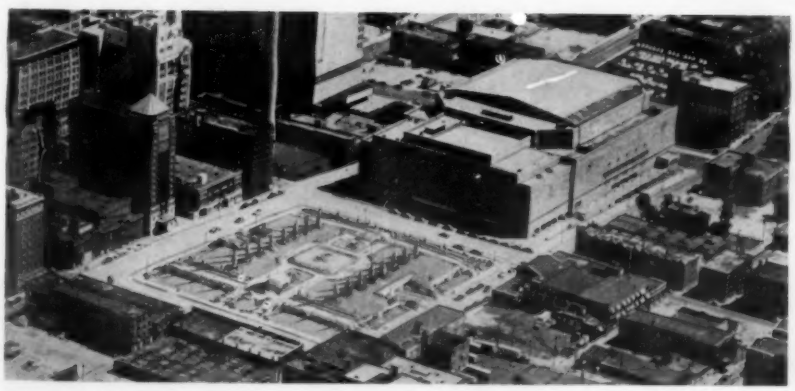
Kansas City Gets Green Light For Improvement Program

DURING the November elections, the voters of Kansas City, Mo., approved by a three-to-one majority every city project submitted and authorized a total of $41,561,000 in public improvement bonds. The City Council had pledged that the improvements and construction would be spread over a 15-year period so that a 5-mill tax levy for debt service, the pre-war average, would not be exceeded.

Shown below are two of the many projects now authorized. The upper view is a design for a community center, typical of several to be constructed out of funds totaling $787,000 allotted for this purpose. The buildings will include a gymnasium and auditorium with portable seats, rooms for games and parties, and a snack bar with a kitchen. The outside development provides for baseball diamonds, tennis courts, etc.

The lower photo shows the proposed open plaza and 1,500-car underground garage, to cost $2,500,000. It is to be located on an entire block downtown, across the street from the municipal auditorium.





United Relief Campaign Requires Community Support

Next month the American people will be asked to contribute $60,000,000 to American Overseas Aid and the United Nations Appeal for Children.

American Overseas Aid is a federation of the major voluntary American agencies for foreign relief, which will also represent the American effort on behalf of the world-wide United Nations Appeal for Children.

AOA itself will not conduct any relief operations. It serves as the medium for financing activities of its various cooperating relief agencies, all of whose administration and promoting budgets have been carefully screened.

The "arithmetic of tragedy" shows that two-thirds of the 2,310,000,000 people alive in the world today are not getting enough to eat. Now through a single organization and a single appeal, AOA presents a thoroughly American way to meet the urgent needs of victims of the war's great aftermath. It is efficient, economical, and sensible.

In communities where AOA-UNAC is not included in the local community chest, a separate AOA-UNAC appeal will be conducted. Community leaders and officials everywhere should exert their influence for maximum public support of this cause.

National Headquarters of the AOA-UNAC is at 39 Broadway, New York 5.

Public Works Officials Urge Comprehensive Planning

THANKS to the Indiana Economic Council, there are now available mimeographed copies of the report submitted to the American Public Works Association at its 1947 Congress in Jacksonville, Fla., by its Committee on Planning.*

This report is notable in its forthright adoption by a group of public works officials and consulting engineers of the premise that comprehensive general planning should bear the same relation to an over-all improvement program that local budgeting now bears to the general operating procedure.

The report makes a strong plea that the planner be recognized as an integral part of local government. The distinction between comprehensive community planning and operational planning is emphasized:

"It is the broad general program of community needs as distinguished from the plans and specifications for a sewer system, a street, or a city building. It is the determination of the answers to the three questions vital to the citizenry:

1) What do we have in our area?
2) What do we need for our area?
3) How can we get what we need?

"These three questions require the joint thinking of public works officials and the regular lay-citizens. The whole concept of planning is, in fact, the analysis of citizen need, on a priority basis, and a program of satisfying that need.

"In the foreseeable future, then, plan-

* Reproduced for the American Society of Planning Officials. Copies can be had on application to that organization at 1313 East 60th St., Chicago 37, Ill.

MOST SIZES IN STOCK

SKINNER-SEAL Bell Joint Clamps—the universal repair for bell and spigot joint leaks—are again available for immediate delivery in most sizes.

Gasket is completely sealed and protected; at the bell face by a Monel Metal Seal Band; at the spigot by hard, vulcanized gasket tip, acting as a plug. Equalized pressure forces gasket into every crevice in the joint, sealing the leak at its source. Sturdy malleable iron Compression and Anchor Rings—shaped and pressure-tested before shipping. Large ¾" high-tensile steel bolts, cadmium plated. Speedy one-man installation cuts repair costs.

M. B. SKINNER CO., SOUTH BEND 21, INDIANA

SKINNER-SEAL BELL JOINT CLAMP

ning should enter the field of acting upon all obligations against the bonding margin of a community, and the plan commission should have review and recommendatory powers in the setting up of bond issues for capital improvements. This will permit the coordination of anticipated income with the over-all community need. In no way should this be construed as advocating extreme powers or the setting up of planning as a 'super-government.' Your committee feels strongly concerning the maintenance of final control in a duly elected legislative body. . . . We are convinced, however, that strong powers of recommendation on comparative need in overlapping programs can, with the support of public opinion, do much in determining legislative action for the whole public good."

International Housing and Planning Conference to Meet In Zurich, June 20-26

ZURICH, Switzerland, will be the meeting place for the XIXth International Congress for Housing and Town Planning during the week June 20 to 26. General sessions are scheduled on financial aid to housing, housing progress and methods employed to promote it, national and regional planning of towns and countryside, and financial relation of planning to ownership rights.

To meet the demand for informal meetings, where experts from different countries can gather for a free exchange of information and ideas, a number of study groups have also been planned. These groups will discuss the following subjects:

1. Training the planner and the planning team
2. Methods of development control
3. Analysis of the survey
4. Neighborhood planning and its architectural expression
5. House or building in relation to site, surroundings, and orientation
6. Growth and development of housing management
7. Standards and equipment for the house
8. Tropical housing problems

All meetings are to be held in the beautiful modern Kongresshaus. Delegates to the Congress will have ample opportunity to tour Zurich and its environs to see the housing and planning schemes developed by the local authorities and the cooperative housing societies. An exhibition on housing development in the city and canton of Zurich is scheduled to open simultaneously with the Congress and continue through the entire week.

Hotel reservations should be secured through offices of the American Express Co., official hotel and travel agents for the Congress. Further information and copies of the preliminary program announcement are available from Morris H. Hirsh, Secretary-General (Acting), International Federation for Housing and Town Planning, 13 Suffolk St., Haymarket, London, S.W. 1, England. The United States representative on the Federation's Bureau is Walter H. Blucher, executive director of the American Society of Planning Officials, 1313 E. 60th St., Chicago 37, Ill.

Interracial Relations And the Police

A TWENTY-FIVE percent reduction in crime in a district to which two Negro policemen were assigned is reported by the Chief of Police of Dallas, Texas, in the October 1947 *New South*. An article by Margaret Price, research assistant of the Southern Regional Council about a poll of police departments discloses that 43 cities and towns in 10 southern states have a total of 228 Negro policemen, 203 serving in uniform and 25 functioning as plainclothesmen. The totals for each city are:

Arkansas: Hot Springs, 2; Little Rock 4.
Florida: Clearwater, 5; Daytona Beach, 6; Deland, 1; Fort Myers, 2; Gainesville, 2; Key West, 2; Miami, 20; Sanford, 21; Tampa, 6.
Georgia: Savannah, 9.
Kentucky: Lexington, 2; Louisville, 21; Owensboro, 2.
North Carolina: Ahoskie, 1; Asheville, 2; Charlotte, 10; Durham, 7; Greensboro, 6; High Point, 2; Raleigh, 2; Winston-Salem, 5.
Oklahoma: Muskogee, 2; Oklahoma City, 11; Tulsa, 13.
South Carolina: Summerton (exact number unknown); Clover, 1.
Tennessee: Chattanooga, 3; Knoxville, 1.
Texas: Austin, 5; Beaumont, 2; Dallas, 2; Galveston, 16; Houston, 6; San Antonio, 9; Port Arthur, 6; El Paso, 4.
Virginia: Newport News, 5; Norfolk, 7; Richmond, 5; Roanoke, 4.

Five of these cities also employ Negro policewomen: Lexington, Ky., 1; Louisville, Ky., 2; Raleigh, N. C., 2; Tulsa, Okla., 1; Petersburg, Va., 1.

Miss Price states that, according to comments offered by various chiefs of police, the use of Negro policemen is proving extremely valuable in the curbing of crime in areas of a predominant or concentrated colored population. A number of cities reported that, owing to the excellent results obtained, more Negro policemen are to be employed in the near future. Others which do not yet have Negro police stated that they are planning to employ them as soon as the necessary appropriations are made.

"Ye Ould Deluder, Satan"

IN ITS November issue, *The School Executive* reminded its readers that November 11, 1947, was not only Armistice Day, but also the 300th anniversary of the most important piece of school legislation in American history, perhaps in the entire history of education anywhere in the world.

On November 11, 1647, the General Court of the Massachusetts State Colony passed the legislation beginning with the famous words, "It being one chiefe project of ye ould deluder, Satan, to keepe men from the knowledge of ye Scriptures." The law orders that every town with 50 householders should at once appoint a teacher of reading and writing and provide for his wages, and that every town with 100 householders should provide for a grammar school to prepare youth for the university.

"Three hundred years ago," *The School Executive* pointed out, "there was no precedent for such a piece of legislation. In its view of the educational responsibility of the state, it was as daring as any document of American history.

"It affirms the right of the State to require its constituent communities to establish and maintain schools and to assess penalties against communities which fail to do so. It establishes the principle, in effect, that children are to be educated, not for humanitarian reasons alone nor to help advance the selfish interests of the individual, but because the society as a whole suffers if ignorance prevails."

If, 27 years after the original landing of the *Mayflower*, the struggling colony could afford a school in every town with a hundred householders, can there be any question of the present ability of our cities to provide schools and teachers worthy of a great and wealthy nation?

Twenty Million Freedom Gardens Needed for 1948

To balance the food supply at home while we ship wheat and other staple foodstuffs overseas, Secretary of Agriculture Clinton P. Anderson urges the planting of 20,000,000 Freedom Gardens this year.

Mayors and other municipal officials can help by pointing out to their fellow citizens that Freedom Gardens will cut down their food bills, provide a better diet, help to hold the line on inflation, and reduce hunger and suffering abroad.

Suggestions as to procedure are available from the National Garden Institute, 598 Madison Avenue, New York 22, N. Y.

IMPORTANT LINK in the WATER DISTRIBUTION SYSTEM at SHREVEPORT, LA.

The 2,000,000-gal. Horton tank below was erected to reinforce the weak parts of the Shreveport distribution system and to help equalize pressure over the entire system

THE two pumping stations and the new elevated tank in the Shreveport distribution system form a triangle, feeding the system from different directions. The tank is filled from surplus water during lean consumption periods and reinforces the system during peak load periods. It floats on the system, equalizing the pressure and relieving the system of shocks brought about by direct pressure pumping. A recent report shows that a minimum pressure of 50 lbs. per sq. in. is maintained at the highest elevation in the system.

For estimating figures on Horton elevated tanks, write our nearest office outlining *your* requirements.

ENGINEERING DATA: *Capacity*—2,000,000 gals., *Height to bottom*—100 ft., *Diam.*—102 ft., *Design*—radial-cone bottom supported by sixteen 42-in. diam. columns and 10-ft. diam. riser.

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Los Angeles 14.....1403 Wm. Fox Bldg.
Chicago 4.....2197 McCormick Bldg.
San Francisco 11.....1233-22 Battery St eet Bldg.
Philadelphia 3...1616-1700 Walnut Street Bldg.
Atlanta 3.....2114 Healey Bldg.
Havana.....402 Abreu Bldg.
Detroit 26.....1501 Lafayette Bldg.

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PENNSYLVANIA

Water Supply and Treatment

"Safe—and You Drink It"

WHEN it concerns these free-swinging stories on stream pollution that have been turning up recently in the popular press, Harry E. Jordan, forthright secretary of the American Water Works Association, has had enough.

Two years ago he settled down in his easy chair one evening and opened the current issue of *Coronet Magazine* expecting to enjoy a few hours of pleasant reading. He opened the magazine leisurely and then suddenly sat up wtih a start. There before his eyes was an article carrying the ominous title, "The Menace of Water." One of the "menaces," the article implied, was that infantile paralysis was waterborne. Harry's evening was ruined.

"Foul . . . "

Late last summer he picked up the morning paper on his daily commuter ride to the office. As he leafed through it for a snatch at the day's news, his eye stopped at a full-page advertisement. There, in bold and uncompromising artistry, was a picture of a household water tap apparently discharging a limp, poisonous fluid. It was a powerful advertisement by the *Woman's Home Companion* publicizing its crusading article, "Foul—But You Drink It." An advertisement designed to bring action. And it did! Reports to our office are that hardened subway riders, inured by years of traveling New York's gnome-like, sardine-like transportation system, stook back in awe and wonderment as Harry made his exit, clutching that paper, with bitter determination written on his face. Reports further tell of how he stormed into his office, disrupted the smooth routine of AWWA personnel, dictated telegrams of protest to the *Woman's Home Companion*, explained in brief that what the people drank wasn't foul if they stuck to the product that their water department distributed.

Harry's sense of tolerance toward the so-called popular press wasn't particularly improved when, a month later, he picked up a copy of the *Magazine Digest* and read the melodramatic title, "Poison from the Kitchen Tap." Nor would it be any more quieted if he knew that *Coronet* magazine planned to add salt to his wounds with another article apparently implying that water, as it is furnished today, is not a particularly wholesome product to drink if you wish to enjoy a long and full life.

Not the Main Target

Of course none of the articles had their guns trained on the water works industry directly. What they were firing at was the pollution of our streams that make surface waters, at least, hard to treat. But to prove their points they tried to show that the water industry was unable to furnish a pure, wholesome product—that it apparently ignored its pledge of service and compromised by furnishing a water that was unwholesome and questionable.

This, Harry resented vigorously—and rightfully.

To give his Association a means of defense, he drew from the technique of international diplomacy and issued what he termed a "White Paper." Governments, as we all know, periodically issue such a document when they are subjected to abuse based on misinformation generally emanating from some outside hostile source. Consequently he assembled, as he states in a communication to AWWA members, ". . . a statement of the facts as we see them—expressed with the degree of calmness and accuracy that professional responsibility makes necessary."

"White Paper" Disclosures

The paper suffers because of a lack of sensational disclosures. It is unfortunately the case that we will stop and look at something wrong more often than we did at something right. A house may be well designed and carefully constructed. But it doesn't make big news until it catches fire. Harry had to couch his counter-punches in relatively undramatic statistics to the effect that today only one person in 200,000 is likely to die of typhoid whereas 50 years ago the figure was one in 200. However, he made the most of them. He pointed out, for example, that on the basis of the figures in the magazine articles themselves, and assuming that each person will drink only one glass of water per day, your chances of running into trouble are less than one in three million. He might have added that as far as danger is concerned, comparatively speaking, the only real water risk that you run occurs when you step in and out of the bathtub, and you can scarcely expect your water-works superintendent to help you there.

Gossip Doctors

Harry takes husky swings at the "gossip doctors" that tie the spread of poliomyelitis and cancer to the water supply. He rightly scoffs at the idea of trying to frighten the public about the safety of drinking water in order to promote stream-pollution control.

Although the "white paper" was prepared with the assistance of leaders in the field of water supply, he states that responsibility for its statements rests on one individual, Harry Jordan.

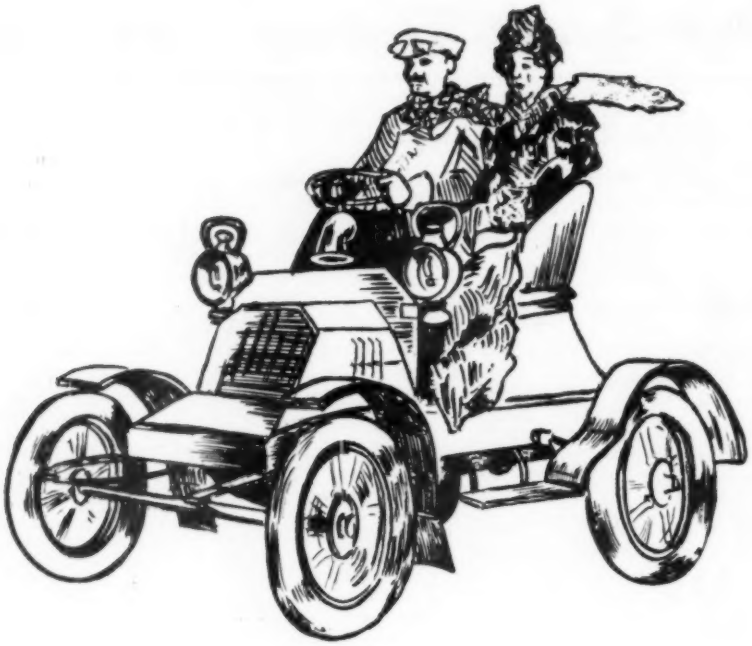
If you are interested in the document and don't have a copy, drop a note to the American Water Works Association, 500 Fifth Ave., New York City 18, N. Y. Be sure to enclose a return address label and 1½ cents postage.

Distribution Leaks and Meter Registration

IF YOU can't account for at least 80% to 85% of the water pumped, it is time to start investigating. So said John Briggs, assistant superintendent of the Freeport, Ill., water department, in a paper delivered recently before the Northwestern section of the Illinois Water-Plant Operators Association.

In hunting down those leaks, the utility can employ one of the nationally recognized firms whose business is conducting water-waste surveys and leak-removal campaigns. Though this type of survey may look expensive, it usually results in an increase in revenue and a reduction in pumpage that will pay for the survey in a comparatively short time. Other methods of hunting down leaks include inspection of sewers, observation and inspection of springs and ponds, and the use of one of the mechanical leak locators available to water works men.

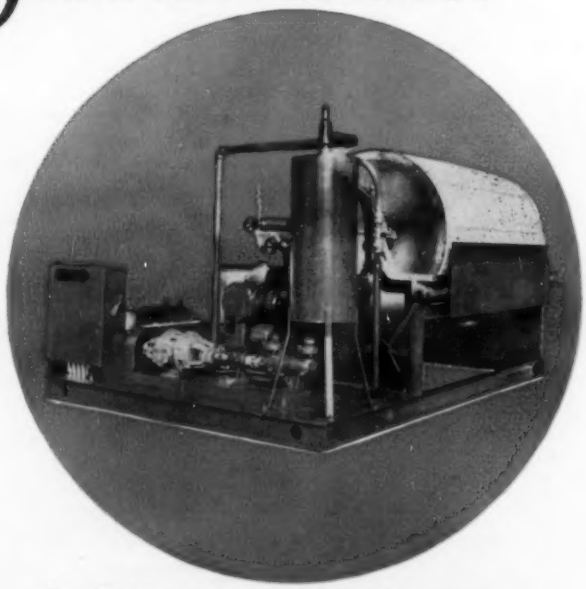
Inaccurate meters present another loss to the water works, said Mr. Briggs. The meter is the cash register of the utility and as such should register correctly. Many services are over-metered. Often a large meter is installed for a consumer when a smaller one would meet the requirements. Every small meter should be tested at least every 7 to 10 years. Large meters should be tested every year.



No! too old fashioned!

That's right! You balk at anything that's not right up to date. In these modern times we all want things modern. But — is your city giving its citizens the modern protection they should have for prevention of disease and epidemic? Look at your sewage treatment plant. The last survey showed 13,000 cities in the United States alone whose officials admitted inadequate disposal equipment on hand.

For complete, sure protection insist on using Eimco Continuous Vacuum Dewatering Equipment. Clean up the streams, eliminate fly and mosquito breeding places, provide for the future without paying for it now. Call in an Eimco Engineer for more information on modern sewage sludge dewatering.



The "Package-type" unit includes all necessary equipment for operation of the dewatering unit, mounted on subbase with wiring and piping complete — ready to "hook-up" to supply lines.

EIMCO

THE EIMCO CORPORATION

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Branches — 67 Wall St., New York 5 — 3319 So. Wallace St., Chicago 16 — Mills Bldg., El Paso — 1217 - 7th St., Sacramento 14
Birmingham 9, Alabama — 110 Malaga

Sewerage and Sewage Treatment

New Relationships Proposed To Evaluate Digester Performance

DIGESTER operation can be evaluated more accurately by relating the raw sludge volume fed to the digester and the retention time used; this relation will hold regardless of the type of sludge being digested. R. S. Rankin, assistant manager of the North American Division of the Dorr Company, New York, brought this out in a paper delivered before the recent annual conference of the Pennsylvania Sewage Works Association at State College, Pa.

For a long time designers and operators have been bothered with the problem of the amount of sludge a digester of a certain volume can handle. The engineer designing a plant uses one yardstick to establish size, but the operator, when he takes over, seldom knows what the yardstick was and seldom has an opportunity for basing his work on it. The traditional "cubic feet per capita" has the recognized weakness of falling down when industrial loads are present. The term "pounds of dry solids per cubic foot of tank volume per month" is more workmanlike, but still does not give a thoroughly reliable guide.

In order to find a yardstick of real value, the Dorr Company undertook a study of operation records from more than 50 well-operated digester installations. The first revealing factor discovered was that in a great many cases the output of the solids did not equal the input, probably because of discrepancies in sampling or other reasons. By selecting about a dozen plants whose operating data showed fairly close relationship between the output and the input of solids, they were able to reach a working basis. The selected plants represent various types of treatment processes and the plant data were carefully compiled. The figures took into account the solids in the sludge, in the supernatant, and also in the digester gas, basing the last on the factor of 14.5 cubic feet of gas per pound of volatile solids.

Assuming that a relationship exists between detention of raw sludge and volatile matter reduction, then digester performance may readily be predicted by the designing engineer and checked by the plant operator with reasonable accuracy and assurance of results.

A study of the operating data disclosed that plants with a sludge detention period of less than 30 days were experiencing supernatant troubles, and those with 60 days or over seemed to have no troubles.

Mr. Rankin presented charts showing the relation between reduction in volatile matter in digested sludge and the detention period of raw wet sludge; also between the total and volatile matter in digested sludge; and between the volume required in the digester, and the detention in days for various solids content of raw sludge.

A Sandy Cut

You can't expect trim ditch lines when you have to make your cut in sand. And you have to be ready to move plenty of sand in order to reach the proper depth. Benton Harbor, Mich., uses its mobile, truck-mounted Michigan power shovel with a clamshell to make the excavation. This particular work is being done as a preliminary to a sewer-pipe installation.

"Clean Waters" Wins Honors

GENERAL ELECTRIC'S popular offering to the stream-pollution-abatement program, "Clean Waters," recently received special commendation. At the International "Films of the World Festival" in Chicago, it was selected as the world's best commercially sponsored film, chosen Grand Festival winner by a popular vote of the audience previewing entries from 63 industrial and commercial organizations.

The festival was sponsored by the Chicago Film Council, Northwestern University, the University of Chicago, the General Federation of Women's Clubs, and the Illinois PTA.

Sewage-Gas Production

THE Wichita, Kans., sewage treatment plant generates 80 million cubic feet of gas per year. The gas is used to heat buildings and digesters, and to operate an incinerator, and to drive a gas engine. The plant furnishes primary treatment.

DELAYED ALARMS

CAUSE FIRE DISASTERS

WHEN FIRE OCCURS——PULL A FIRE ALARM BOX

IMMEDIATELY!

"It is generally recognized that there is no other thoroughly satisfactory means of sending and receiving fire alarms than an approved fire alarm telegraph system. Telephones should not be relied upon to replace needed boxes nor to supplement any inadequacy in number or location of boxes."

—National Fire Protection Association

DETAILED INFORMATION ON REQUEST

THE GAMEWELL COMPANY

NEWTON UPPER FALLS 64, MASSACHUSETTS

IN CANADA: NORTHERN ELECTRIC COMPANY, LTD., MONTREAL

Public Safety

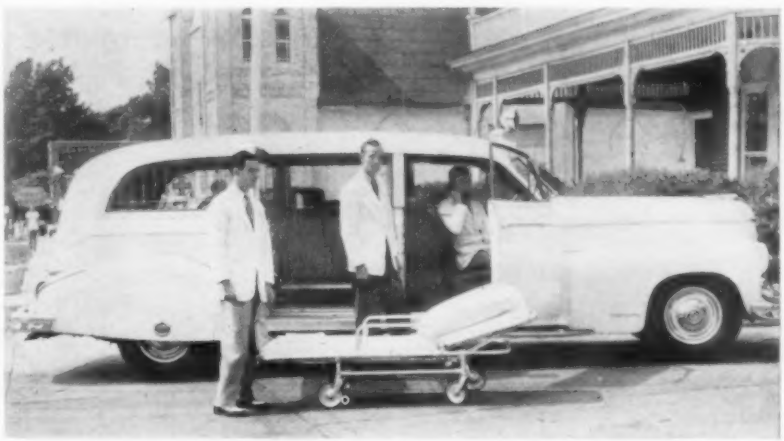
High Point Pioneers Private Radio Communication

TAXICABS are so much a part of big-city traffic that their drivers often aid in providing information by two-way radio to be relayed to such public officers as policemen and firemen. Their eternal searching for fares often reveals fires or crimes, incipient or under way. In many instances, cab drivers may be the means of saving lives and property.

In one city, at least, the consciousness of a possible public obligation beyond the carrying of passengers has extended to the management of a taxicab company. The application of very high frequency (VHF) radio to the dispatching of cabs suggested this public service. J. Frank Beck, owner of the Blue Bird Cab Co., Inc., High Point, N. C., seems to be a pioneer in this field. In equipping his business with VHF two-way radio in 1945, he made the communication service available also to the local medical profession. In fact, he offers the service to all vehicles in the city that can use radio dispatching.

His first customer was the J. W. Secrest and Son Ambulance Service. Recently, Beck's dispatcher was informed that two linemen setting a pole in an outlying district had come in contact with high-tension wires. On reaching the scene, the ambulance driver radioed for a second ambulance to take care of the fatally injured man, while he rushed the living victim to the hospital—calling ahead to have the iron lung ready.

JOHN M. SITTON
Bendix Radio Division
Baltimore, Md.



Secrest ambulance, equipped with VHF radio, is in touch with headquarters, even while en route. Taxicab dispatcher, whose duties extend to subscribing services, including the ambulance service mentioned in the story at the left.

Fight Against Hotel Fires

ACTING to smother threats of hotel fires like those last year which took a toll of 200 lives, several states are imposing fire prevention laws.

A recent statute in Georgia, barbed with a provision for a $100 fine for each day of violation, sets up a building safety directors' office supervised by a new building safety council. The director has broad powers to effect exacting fire control regulations and to limit the occupancy of buildings designated as fire hazards.

In Kentucky, some 200 hotel managers have new fire control requirements to meet, including at least two separate and independent exits for each hotel, vertical and horizontal draft stops, and sprinkler systems.

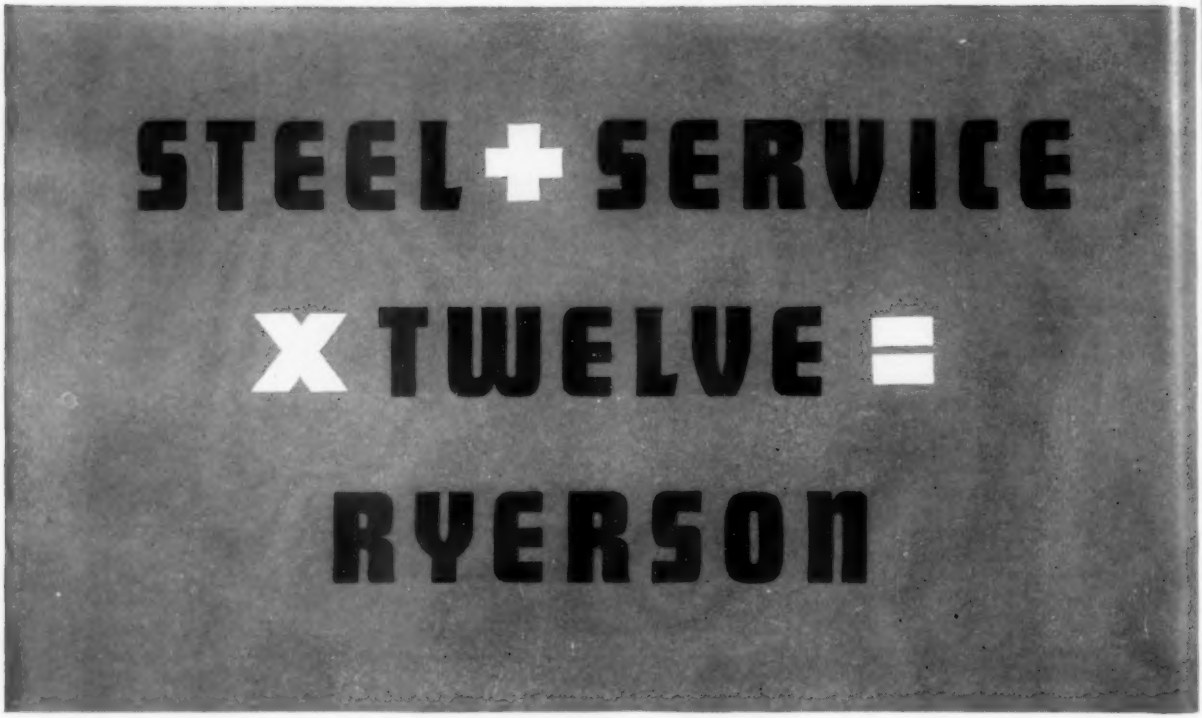
New York State's new fire control law will be administered primarily by cities and will affect more than 500 hotels in New York City alone. Two exits for each hotel are required, as well as self-closing fireproof doors at stair landings, fireproof storage compartments for linen and other inflammables, and automatic fire alarm systems.

California, Colorado, Illinois, Iowa, Michigan, Nebraska, New Jersey, and Pennsylvania have introduced into their legislatures bills for more stringent fire control regulation.

Miami Public Buildings Must Have Sprinkler Systems

THE 30-year battle for the installation of sprinkler systems in all of Miami's public buildings, instigated by Fire Chief Henry R. Chase, has finally been won. A new ordinance requires such fire control equipment, giving the owners two years to make the installations.

Chief Chase declares that building owners will save a million dollars a year in insurance premiums. The saving depends on the area of coverage by sprinklers, type of water supplies provided and type of alarm service.



Formula for nation-wide Steel-Service

Take a large and diversified stock of steel products. Add a complete, expertly trained service organization. Then multiply by twelve and you've got Ryerson—the answer to a multitude of steel problems.

The great twelve-plant Ryerson Steel-Service system is the dynamic result of more than a century of experience in the business of steel distribution. It's an organization built around the varied abilities of thousands of experienced steel men. And its sole purpose is to meet your steel requirements as accurately and as promptly as possible.

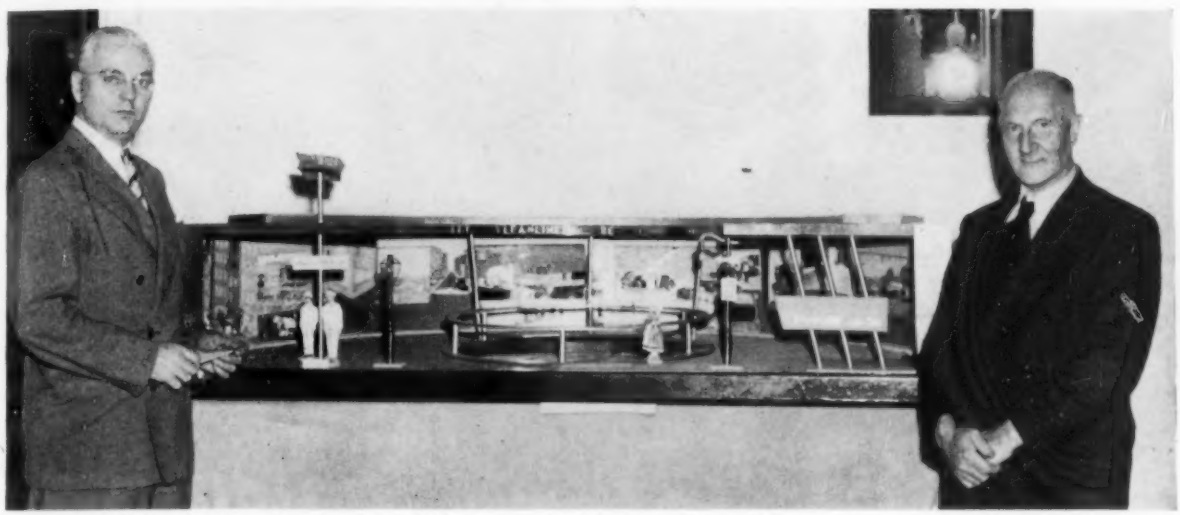
Restricted only by the shortages brought on by today's tremendous demand, Ryerson Steel-Service is always yours for the asking, whether your needs are measured in pounds or tons. So contact the nearest Ryerson plant for prompt personal service whenever you need steel and for full cooperation whenever you are faced with a steel problem.

Joseph T. Ryerson & Son, Inc. Steel-Service Plants at: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles.

RYERSON STEEL

Street Cleaning and Refuse Disposal

Department of Sanitation Exhibit for New York City's Golden Jubilee



A model of the functions and operation of New York City's Department of Sanitation is on exhibit at the Metropolitan Club, 5th Ave. and 60th St., New York, N. Y. Planned and designed by Administrator Harry R. Langdon (left), the model's theme is "Let Cleanliness Be Your Hobby." It is animated and sectional so that picture displays and factual data may also be demonstrated. The model, constructed by Otto Ernst (right), was designed specifically as part of the program for the Exposition in celebration of New York City's golden jubilee and will be on exhibit again in August and September of 1948 at the Grand Central Palace.

International Conference on Public Cleansing

ENGLISH and continental European refuse collection programs still lay special emphasis on salvage operations, according to reports from the International Conference on Public Cleansing held in Amsterdam, Holland.

One of the keynote papers delivered before the conference was by J. C. Dawes, Director of Salvage and Recovery, Board of Trade, London, England. Mr. Dawes pointed out that cinder fuel is present in British refuse to the extent of about two million tons a year and contains at least 60% of its original calorific potential. This can be recovered and made to produce perhaps 90% of its original potential. He applied the same reasoning to waste paper, bones, metal scrap, and other raw material normally thrown away.

W. A. G. Westrate, Chief Engineer of the Department of Public Cleansing, Amsterdam, Holland, pointed out that a cow can give one liter of milk from eight kilograms of potato peelings. He also reported that some 60 to 70 thousand tons of paper are reclaimed annually in Amsterdam as are some 35,000 tons of rags.

Robert B. Brooks, St. Louis consulting engineer, in commenting on Mr. Westrate's paper, brought out that prior to the war, Cologne, Germany, developed a highly efficient salvage program which reclaimed virtually everything of any value. Nevertheless, despite the efficiency of the work, the program failed to produce a profit over operating costs.

The principal contribution to the conference from the United States came from W. A. Xanten, Superintendent, City Refuse Division, Washington, D. C. Mr. Xanten, in summarizing street cleaning practices in the United States, pointed out typical equipment used by cities in this country; of these, the vacuum leaf loader attracted particular attention.

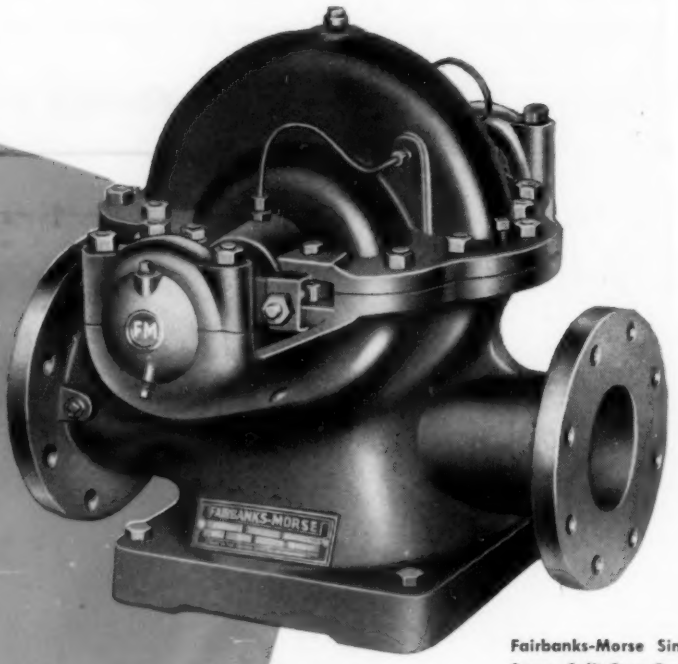
Mr. Xanten put in a plea for the establishement of a basic formula for reporting street cleaning data, so that cities could compare operations intelligently. He concluded with the statement that no city can remain clean without full cooperation of its people.

Members of the Executive Committee of the International Conference, which will function up to the time of the next Conference in Paris, France, in 1950, are: A. M. Noppen, President, Amsterdam, Holland; H. Ardern, Westminster, Great Britain; A. Janssens, Antwerp, Belgium; Als. Bossard, Lucerne, Switzerland; J. W. Partridge, Paris, France; A. Bjorkman, Stockholm, Sweden; J. C. Dawes, Past President, London, England; Robert B. Brooks, St. Louis, Mo., U. S. A. Mr. Brooks has been a member of the Executive Committee of all four of the Conferences and each time has represented either the American Public Works Association or one of the predecessor groups which forms the APWA.

Refuse Detective Work

DEAD men may tell no tales, but discarded refuse often does. Because a package of garbage discarded on the Southern State Parkway near Roosevelt, N. Y., contained information which made it possible to identify the owner, state police recently arrested the offender. Chief Magistrate Leslie J. Ekenberg of Nassau District Court placed a fine of $5.00 for the violation of Long Island State Park Ordinances.

Why use two stages when ONE will do?



Fairbanks-Morse Single-Stage, Split Case Centrifugal Pump—for dependable, high-speed service.

When your job demands a multi-stage pump, the Fairbanks-Morse pump expert will recommend the right one from among the broad line built by *his* company . . .

But—frequently he can help you save the cost of a more expensive unit by recommending one of these single-stage, split-case pumps . . . whose performance, where heads reach toward 300 feet and capacities range to 72,000 g.p.h., is often equal to that of more costly multi-stage pumps.

Without prejudice, he can find for you the pump that suits your needs best; for in the Fairbanks-Morse line, he has all types, all sizes.

When it comes to pumps...

FAIRBANKS-MORSE

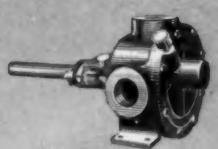
A name worth remembering

DIESEL LOCOMOTIVES • DIESEL ENGINES • STOKERS • SCALES
MOTORS • GENERATORS • PUMPS • RAILROAD MOTOR CARS and STANDPIPES • FARM EQUIPMENT • MAGNETOS

A FEW OF THE COMPLETE LINE OF FAIRBANKS-MORSE PUMPS

Trash Pumps

Side-Suction


Rotary

Builtogether

Airports and Aviation

$64,800,000 in Airport Funds Reallotted

IN ORDER to use what is left from the $45,000,000 appropriated for 1947 and the $32,500,000 appropriated for the present fiscal year, the Civil Aeronautics Administration has prepared a new program making a revised allotment of these funds.

Out of the new program will result an expenditure of $133,500,000, of which the government will supply $64,800,000 and the states and territories approximately $68,700,000. There will be nearly 900 projects, of which more than 700 will be the smaller airport (under Class III), and 171 will be larger fields. On a percentage basis, however, the money spent for the larger fields will be approximately the same as that spent on the smaller.

Ten percent of the money will go for land, 8% for buildings, and 82% for other items of construction, such as runways and runway lighting.

Airline Pilots Ask For Longer Runways

IN THE recent hearings held by the Civil Aeronautics Administration on the length and strength of runways for various kinds of carrier operations, the Air Line Pilots Association went on record with the opinion that the runway lengths proposed are too short and should be longer. The Association argued that in the past it has been found that on wet and icy runways, the only fully dependable safety factor is a long runway. It further argues that the figures proposed relate toward dry runway conditions.

Runway strengths, the Association feels, should also be increased to take into account impact force, although certain structural analysts have contended that the force is relieved so quickly and is so cushioned by shock absorbers and pneumatic tires that it does not have an opportunity to react as does a similar blow from a hard, unyielding force. Most airports experience greatest runway deterioration on the warm-up aprons, where the continued vibration of the planes causes trouble, particularly on flexible surfacing, unless it is heavily designed.

The CAA proposal called for a set of standards—tabulated on the right.

SUMMARY OF 1947–48 FEDERAL AIRPORT PROGRAM

Name of State	No. of Projects by Airport Class			Allocation of Federal Funds		Sponsor's contribution	Total program
	1, 2, 3's	4 and above	Total	From State apportionment	From Discretionary fund		
Alabama	6	2	8	$817,736	0	$128,486	$1,646,222
Arizona	8	3	11	1,066,575	$156,910	1,035,419	2,258,904
Arkansas	11	5	16	839,924	120,073	1,032,737	1,992,734
California	27	17	44	2,726,618	1,699,381	4,216,492	8,642,491
Colorado	17	1	18	1,046,019	0	975,031	2,021,050
Connecticut	2	3	5	342,222	0	348,223	690,445
Delaware	0	1	1	30,000	0	30,000	60,000
District of Columbia	0	0	0	0	0	0	0
Florida	12	5	17	794,985	0	744,475	1,479,460
Georgia	12	2	14	1,129,788	74,129	1,231,193	2,429,110
Idaho	41	2	43	814,048	177,283	827,027	1,818,358
Illinois	10	2	12	2,068,297	3,023,750	6,270,547	11,362,594
Indiana	17	6	23	994,309	258,292	1,410,851	2,663,452
Iowa	20	2	22	806,502	0	952,511	1,759,013
Kansas	30	2	32	1,057,945	109,982	1,337,815	2,505,742
Kentucky	12	2	14	910,988	132,660	1,377,250	2,420,898
Louisiana	11	5	16	892,429	62,398	1,063,578	2,018,405
Maine	4	1	5	264,967	0	271,968	536,935
Maryland	3	3	6	468,024	494,126	1,118,450	2,080,600
Massachusetts	7	3	10	940,017	418,933	1,385,263	2,744,213
Michigan	30	5	35	1,870,924	357	2,375,163	4,246,444
Minnesota	22	5	27	1,289,830	540,620	1,970,580	3,801,030
Mississippi	14	3	17	777,656	0	823,914	1,601,570
Missouri	28	2	30	1,346,986	836,258	2,621,316	4,804,560
Montana	35	3	38	1,164,373	0	1,043,871	2,208,244
Nebraska	26	4	30	918,309	44,833	1,130,959	2,094,101
Nevada	3	2	5	960,313	67,381	624,683	1,652,377
New Hampshire	14	1	15	177,104	14,466	212,735	404,305
New Jersey	4	2	6	900,307	65,745	986,678	1,952,730
New Mexico	16	4	20	1,122,796	0	396,337	2,019,153
New York	6	7	13	3,148,932	1,654,093	4,812,775	9,615,800
North Carolina	8	4	12	1,160,475	187,520	1,516,335	2,864,330
North Dakota	24	5	29	486,010	0	548,540	1,034,580
Ohio	12	5	17	1,758,284	323,926	2,614,924	4,697,134
Oklahoma	23	3	26	1,059,944	243,460	1,385,336	2,688,740
Oregon	17	9	26	624,063	0	533,466	1,157,529
Pennsylvania	22	2	24	2,367,510	1,355,997	3,790,455	7,513,962
Rhode Island	1	1	2	152,835	51,770	204,605	409,210
South Carolina	4	2	6	644,054	40,696	703,750	1,388,500
South Dakota	14	0	14	768,515	0	722,323	1,490,838
Tennessee	14	4	18	940,717	647,273	1,767,372	3,355,362
Texas	63	13	76	3,549,984	197,217	4,310,652	8,057,853
Utah	17	5	22	830,662	208,034	659,225	1,597,971
Vermont	5	1	6	153,281	85,519	253,500	92,300
Virginia	5	2	7	893,868	40,196	934,064	1,868,128
Washington	16	5	21	945,797	709,403	1,694,900	3,950,100
West Virginia	2	1	3	584,967	242,088	827,055	1,654,110
Wisconsin	23	3	26	1,188,451	533,711	2,086,188	3,308,350
Wyoming	7	1	8	265,615	0	204,500	470,115
Totals	**725**	**171**	**896**	**$49,997,985**	**$14,818,530**	**$68,713,537**	**$133,530,052**

An estimate of the way that the Civil Aeronautics Administration plans to apportion the financial assistance under the 1947-1948 Federal Aid Program.

Airport Runway Lengths Proposed by CAA

Type of Airport	*Runway (feet) at sea level* Length	*Width*	*Taxiway (feet width)*	*Landing Strip (feet width)*	*Maximum pavem't* loading (pounds)* Single Wheel	Dual Wheel
Feeder	3,500	75-100	40	300	15,000	20,000
Local	4,500	100-150	50	400	30,000	40,000
Express	6,000	150-200	75	500	60,000	80,000
International	7,000	150-200	75	500	60,000	80,000

* Runway and taxiway pavement may be eliminated where surface conditions permit satisfactory year-round operations without such paving. Starter strips, warm-up pads, and loading aprons may be used in lieu of complete paving where they are substantially equivalent to such paving.

FAST ACTION UP FRONT!

YES — You get plenty of fast action when TRAXCAVATORS are on the job—digging, grading, stripping, bulldozing or any other of the many material moving and handling jobs that they do so well. And fast action is important —because it means more material handled in less time.

TRAXCAVATORS are expressly built to do fast, tough digging at rock-bottom costs! Mounted on big, powerful, surefooted "Caterpillar" track-type tractors, they give you a combination that gets more work done in less time and for less money than any other machines of comparable size and capacity.

Investigate TRAXCAVATORS—find out how their direct, powerful digging action and high mobility can help you in your work. Your nearest TRACKSON-"Caterpillar" dealer will be glad to show you how TRAXCAVATORS are used for all kinds of earth-moving and material-handling jobs . . . road and street building and maintenance, pit and quarry work, stockpiling, snow-removal, and hundreds of other similar jobs. It will pay you to see him today or write direct to TRACKSON COMPANY, Dept. AC-18, Milwaukee 1, Wisconsin.

TRAXCAVATOR

REG. U. S. PAT. OFF.

The Original Tractor Excavator

Street Construction & Maintenance

Kalamazoo Cuts Curb-and-Gutter Costs

The curb-and-gutter paver in action.

KALAMAZOO, Mich., is cutting the cost of street paving by mechanizing and speeding one of the traditionally slow and expensive portions of the work. By using a power-driven curb-and-gutter paver, it has so speeded this phase of the work that city forces can lay a standard curb-and-gutter section at the rate of 5 to 8 feet per minute.

City Engineer H. L. Andrus has been using a mechanical paver of this type for several years. With it, he has been able to enjoy a substantial savings in the cost of placing concrete and in finishing the combined curb and gutter. While he has not kept comparative cost data, he believes that the cost ranges between one-third to one-half that of hand work in this same operation.

The machine requires little or no hand finishing after the machine forms the curb and gutter, except for touching up of the transverse joints and some brushing with a mechanic's brush. It does away with the need for division plates and face rails to form the curb.

The Kalamazoo curb-and-gutter section has a two-foot overall width with an 18-inch gutter pan. The curb is 6 inches thick and 6 inches high. It uses a 3-inch radius at the bottom of the curb at the gutter pan and a 2-inch radius at the top of the curb. The concrete used is what Engineer Andrus calls "standard mix" for paving operations and is in no way especially designed for use in the machine work. The concrete has a low slump and uses materials whose largest size is 1½ inches.

Using this machine as a basis, the Dotmar Industries of Kalamazoo have developed it over a period of the last two years into a much-improved model. With an interchange of parts, the machine will accommodate curb-and-gutter sections of differing dimensions, making it possible to build a 30-inch combined curb and gutter with a 24-inch gutter pan if required.

Paris Builds Colored Streets

MULTI-COLORED mosaic paving will soon grace the broad Place de l'Opera and the star-shaped intersection of the Arc de Triomphe in Paris, according to a news release by the *New York Herald Tribune*. Workmen are tearing up the old pavement and municipal authorities say it will be replaced by colored paving designs similar to those in public squares of Rio de Janeiro and Florence.

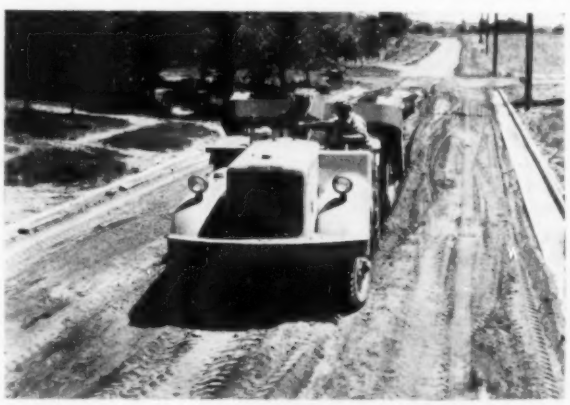
Similar projects are said to be planned for the square at the Hotel de Ville and in some 40 other landmarks around the capital, all of which are currently undergoing much needed repairs.

Maintenance Costs Up 58%

HIGHWAY maintenance costs are up 58% over 1940 costs, according to a report presented before the Highway Research Board at its annual meeting in Washington recently. The meeting was attended by 700 highway experts throughout the United States.

The report disclosed that it takes an average over the United States of $1.71 in 1947 to do the same highway maintenance work that was performed for $1.00 in 1935 or $1.08 in 1940.

A Two-Way Improvement



Building streets and improving property are the two purposes of improvements going on in Sioux Falls, S. D. A Caterpillar wheel-type tractor pulls a scraper full of dirt from a street being graded. . . .

. . . and deposits it on low, adjoining property, making more land available for badly needed housing developments.

MAKE YOUR TOUGH LUBRICATING JOBS } EASY

Seal chassis bearings against dirt and moisture with Texaco Marfak

Use *Texaco Marfak* to protect vital chassis bearings in your earthmoving equipment, and solve one of your toughest lubricating problems.

Texaco Marfak is super-tough and long-lasting — doesn't budge from the bearings. It seals itself in — seals out destructive dirt and moisture. It prolongs bearing life, assures freedom from rust, smoother operation and lower chassis maintenance costs.

For wheel bearings, *Texaco Marfak Heavy Duty* is the lubricant to use. It forms a fluid film inside the bearing, yet retains its original, firm consistency at the outer edges — sealing itself in, assuring safer braking. No seasonal change required.

The fact that more than 275 million pounds of Marfak have been sold, is your assurance of proved performance.

Use the Texaco Simplified Lubrication Plan. A Texaco Lubrication Engineer will gladly give you details. Call the nearest of the more than 2500 Texaco Distributing Plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York 17, New York.

2 MORE LUBRICATION JOBS SIMPLIFIED

Dirt and moisture are tough on track rolls, also. Protect them with *Texaco Track Roll Lubricant.* It stays *in* the bearings, seals out dirt and moisture, prolongs bearing life. For heavy-duty Diesel and gasoline engines, use *Texaco Ursa Oil X***.* It is fully detergent and dispersive — makes engines last longer, deliver more power, use less fuel.

TEXACO

TEXACO Lubricants and Fuels

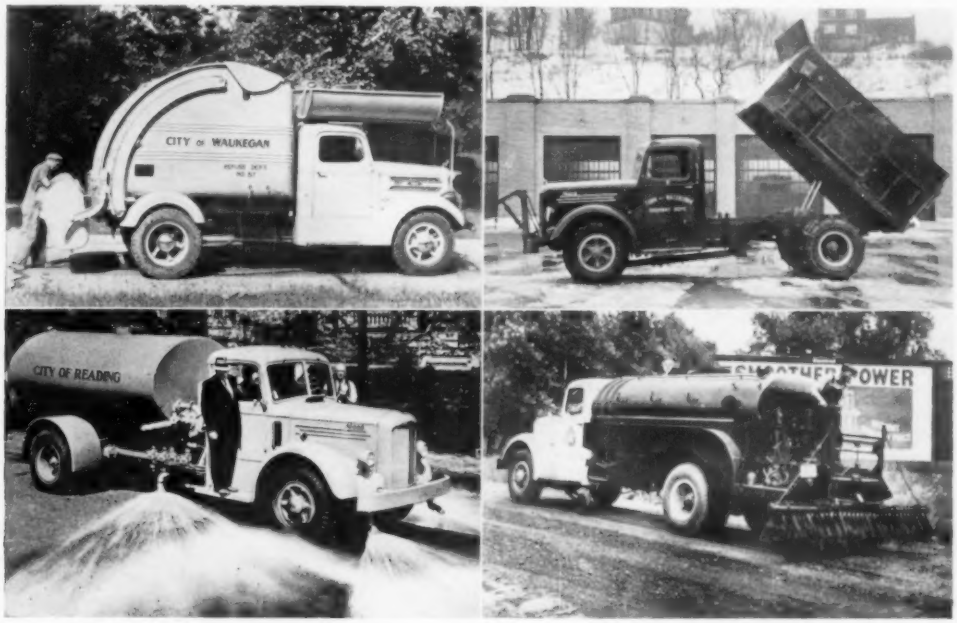
FOR ALL CONTRACTORS' EQUIPMENT

TUNE IN . . . TEXACO STAR THEATRE presents the TONY MARTIN SHOW every Wednesday night • METROPOLITAN OPERA broadcasts every Saturday afternoon

Volume LXIII Number 1
JANUARY 1948
The American City

Dustless refuse truck with tray over cab for carrying light bulky material.

Dump truck with sideboard equipment and rigging for snowplow in front.



Street flusher whose centrifugal pump is driven by separate gasoline engine.

Bituminous distributor with tachometer for controlling the chassis speed.

What Makes a Truck?

CITY DEPARTMENTS use virtually all types of motor vehicles, to the number of 215,000, of which 165,000 are trucks. Moreover, they are in the market for almost complete replacement, because most of these trucks were purchased before 1941, when Uncle Sam became the one big truck customer.

What are trucks? They are first a chassis. For use, they are what is on the chassis. What's on it makes the truck a dump, a general-purpose, a patrol wagon, a utility, a tree puller, a catch-basin cleaner, a wrecker, a refuse collector, a flusher, a repair tower, a snowplow, a street sweeper, a bus, or a fire apparatus.

In all these vehicles, the chassis is the foundation and driving force. In some, the foundation and superstructure are integrated, built from the ground up together for a certain purpose. Others are of the divided or assembled type. Almost all municipal departments require trucks, and almost all municipal officials are concerned with their purchase and performance.

The mayor and department heads want a vehicle that will best perform a city service. The city engineer and the utility and public-works superintendents want low-maintenance costs and high dependability. All want low price and operating cost and effective operating results.

It has been said that quality begins where the specifications stop. Trucks or chassis of around the same capacity may differ considerably in weight and price. They are built to suit the price buyers, the quality buyers, and those between. The truck market in normal times is so competitive that differences in prices usually represent differences in values. The "between" buyer, the value buyer, seeks the cheapest truck capable of performing efficiently the work to which it will be applied—its duty.

"Duty" does not mean capacity, but ability to withstand continuing operation. In terms of miles, there are trucks of about the same capacities costing $1,200 to $3,250, with life expectancies of 60,000 to 500,000 miles. For intermit-

Photographs courtesy of the Mack Manufacturing Company.

tent service averaging, say, 10 miles a day or 21,000 miles in 7 years, the cheaper truck is indicated. On 100-miles-a-day service, a truck will have gone 200,000 miles in seven years, or over three times the mileage life of the 60,000-mile truck. Thus the first guide to the selection of a chassis is to determine the "duty" it must meet—whether light, medium, or heavy. There is no mathematical formula for an exact determination of duty. Judgment and experience are the guides.

Capacity

The capacity of a truck body can be computed in cubic feet or cubic yards; but what is the capacity of a chassis? In the beginning, the manufacturers' tonnage ratings were accepted. Those were puposely made conservative, so that breakdowns from heavy loading would not be charged to design or construction failure. Truck users soon found that overloading was permissible, and it became an accepted practice. In an effort to correct this condition, ratings were given as a range—3½ to 5 tons, for example—but the higher figure was accepted by the user and exceeded as before.

Recognizing that tonnage ratings are worse than useless, the next effort was to use the "gross ton rating," which is the total capacity for load superimposed on the chassis. It includes the pay load, body, and any special equipment such as winches, etc. This is regarded as the most practical method of rating.

A damper to overloading is the necessity to use oversize tires. Tire manufacturers offer a range of sizes designed for the economical loads which a chassis can carry. *A guide to the capacity of a chassis is the maximum-size tire which the truck manufacturer says can be placed on the chassis.*

To Check Capacity

A check of capacity of his truck can be made by the user if he can obtain the accurate weights of the engine, radiator, clutch, transmission. Subtracting the sum of these weights from the gross weight of the chassis (including these parts) and multiplying by a factor, 3.5, will give a good check of the maximum gross-weight capacity in pounds. On a certain chassis of 6,500 pounds gross weight, the engine weighs 1,100 pounds, the radiator 125, clutch 60, transmission 475 pounds. Subtracting the sum of these elements, 1,690 pounds, from the gross chassis weight gives a net weight of 4,740 pounds. Multiplying by the factor 3.5 gives a maximum gross-weight capacity of 16,525 pounds. The virtue of this method is that it is said to work consistently. It is a check on the claims of manufacturers as to the reasonable capacity of a chassis.

The load on any chassis is not a dead load. It is a weight plus dynamic stresses occasioned by the type of streets and roads and the speeds. Where the weight is evenly distributed, the terrain flat, and the pavements smooth, the load carried may be greater. Where conditions are the reverse, the weight loaded may have to be 10% to 25% lighter. The type of loading that imposes least stress or wear is the high-density load, which means a lower center of gravity and freedom from grades that shift the center of gravity forward and back. It is these two leverages that wreck a truck, and it takes only one stressing beyond the elastic limit to foreshadow failure.

Performance

The efficient or proper handling of load, including the rate of delivery, is called truck performance. This can be expressed in several ways, as in pounds of gross weight per horsepower or in engine displacement. An objection to pounds-per-horsepower is the difficulty of determining the horsepower, which varies upward with the speed. Engines of the same size rated at different speeds will have different horsepower ratings, yet one may be a better engine than the other. Using displacement as the basis assumes that all the trucks under consideration will be equipped with efficient engines. Displacement is the piston-swept volume of the cylinders. The volume of cylinders is obtained by multiplying the bore times the stroke times the number of cylinders. In a 4-by-5 cylinder, multiply the bore's 4 inches by πr^2, which gives 12.57 square inches; then times the 5-inch stroke, which gives 62.85 cubic inches for one cylinder; times 6 cylinders equals 377.10 cubic inches displacement.

A simple formula, however, is by no means the whole story. Other factors determining performance are correct gear ratio, right number and relationships of transmission shifts, maximum practical speed, reasonably fast hill-climbing, and ability to accelerate in a short distance from start to cruising speed. The last two factors are made possible by reserve power. To attain these factors in a truck of the right weight-to-power ratio requires having the number of speeds and the progression of ratios provided by the transmission.

What's Economy?

The truck buyer, who will be the user, will have to decide what he means by "economy." He may save in purchase price by purchasing a cheaper truck whose operating cost also may be lower. On the other hand, if he wants a low ton-mile cost, he must pay for it in a higher price and in per-mile costs. In phases of municipal work where a truck is used intermittently and on odd jobs, high performance is subsidiary to low price and operating cost. Whether a town is hilly or flat will affect the decision. The degree of traffic congestion, numerous stops as in the case of garbage trucks and buses, and consequent low average speed, will make differences. With many stops, acceleration becomes important, in order to cover distance and save time.

The horsepower required for a given gross weight for any given degree of performance can be determined by the use of two sets of data: (1) the relationship between tractive effort, grade ability, and acceleration, and (2) the tractive effort equivalents for rear-wheel horsepower and speed. Tractive effort is measured in pounds per ton. As an example of the use of these tables: What rear-wheel horsepower is required for a 20,000-pound truck to negotiate a 3½% grade at 20 miles per hour? The first table shows that 3½% grade ability requires a tractive effort of 100 pounds per ton or 1,000 pounds for this truck. The second table shows that 1,000 pounds tractive effort at 20 miles per hour requires about 55 hp at the rear wheels. This is a theoretical figure which is modified upward in accordance with the engine speed selected and the friction losses. The particular engine needed here turns out to be of 64 hp.

Manufacturers rate their engines at the horsepower shown on a dynanometer in the shop and without including the accessories, which consume 8 to 20 hp. The reading, too, is usually at a higher speed than that permitted by the engine governor. Engine size alone is not a guarantee of good performance.

Considering Particular Types of Truck

With American cities owning and operating 165,000 trucks, there are officials, always including the city engineers, who are able to decide what size truck will be the most economical for a given operation.

In the case of a *dump truck* to carry asphalt, the length of run will materially determine the most economical cubic-yard capacity—long-run larger capacity. A dump differs from a cargo type by being more rugged in the frame. The dump has a slower gear ratio in the rear axle and a wider range of ratios in the transmission because of occasional operation in soft ground. It may have to run on subgrade or in spoil, unimproved ground, or soft fill. There must be special provisions on the chassis, such as power take-off for the hoist. The frame is short at the back end to allow for dumping.

A *street flusher or sprinkler* is a spe-

cies of tank truck. The pump is sometimes driven by an engine takeoff. Requirements include slow gear ratio and plenty of capacity for the big tank. Slow speed in the summer calls for increased cooling capacity.

Emergency trucks are too often old trucks or new bodies on old chassis. These should not be ordinary trucks and should be constructed on fire chassis, for they need the ability to get up and go to a degree not ordinarily found in a commercial chassis.

Tower wagons used by municipal electric utilities require stability of chassis. To attain this they must be heavier than normal to their capacity. Otherwise, operations on high crowned asphalt streets are hazardous.

In *garbage trucks* the prime requirement is capacity rather than power. The bodies may carry 10, 16, or 22 cubic yards; and the packing type, which increases the tonnage within the cubic yard capacity, merits close attention.

Both *street sweepers* and *snow removal vehicles* are highly specialized, built for special equipment and service. They should be designed throughout for their special performance. Rotary plows and brooms are not applicable for use on truck chassis. On the other hand, flushers and garbage trucks are often equipped with blade and V-type snow plows for use in clearing. Farm tractors similarly equipped clear sidewalks. Dump trucks are rightly employed for both plowing and sweeping.

Police patrols, prison vans, and *morgue wagons* raise no special design problems, and the commercial truck chassis is suitable. *Ambulances* are built on high-grade passenger chassis. *School buses* are built on truck chassis with a long wheelbase on which the body is mounted separately. The *city transit bus,* unlike any other vehicle, is a single structure. *Fire apparatus* chassis must have great power.

* * *

This article may have given two impressions. It may seem to suggest that city officials can place themselves in a position to select and specify just the truck needed for a given purpose. The second impression may be of a lack of sufficient clear-cut data and formulas for achieving this result. As said in the beginning, quality begins where specifications end. What city officials should do in purchasing trucks is to set forth clearly the work which the truck is expected to do and the operating characteristics which are sought. The most useful truck specification is not one that gives sizes, dimensions, and parts and tells the manufacturer how to build the truck; but one which objectively gives gross load, size of body, grade ability, speed, and the structural strength required.

Britain Curtails Work On New Towns

Local residents discussing a model of part of the Hemel Hempstead project.

ALTHOUGH the current British economic crisis has resulted in the postponement of work on the development of new decentralized towns, there is still plenty of interest in the proposed form they will take. At Hemel Hempstead, Herts, an exhibition is showing the people the preliminary plan for their new town which will include an artificial lake and seven waterways.

The Government White Paper on Capital Investment in 1948, recently released, revealed that the construction of industrial, transportation, and electricity-generation facilities will be reduced. Housing will be limited by timber importations, and the number of houses under construction will fall after June 1948. New towns designed to serve immediate industrial and mining needs will continue within the limits of the housing plan, while work on those for decentralization will be cut. The step was taken in order to make the fullest use of labor and materials for the export industries.

Public Library Facilities To Be Surveyed

FORTY-NINE representative American communities, ranging from metropolitan to rural, have been selected by the Public Library Inquiry, 70 E. 45th St., New York 17, N. Y., for an intensive cross-sectional study of the country's library facilities. The character of the library facilities, their relation to the needs of the population, and the adequacy of the public library as a source of citizen information will be among the points analyzed in each of the communities selected for study. The survey will be financed by a grant of $175,000 from the Carnegie Corporation and conducted by the Social Science Research Council.

Where Studies Will Be Made

Falling into eight population groups, the selected cities and towns are:

Over 500,000: New York, Baltimore, Boston, Chicago, Cleveland, Detroit, San Francisco, and St. Louis.

250,000-500,000: Cincinnati, Ohio, and Hamilton County; Denver, Colo.; New Orleans, La.; Newark, N. J.; Rochester, N. Y., and Seattle, Wash.

100,000-250,000: Chattanooga, Tenn., and Hamilton County; Flint, Mich., and Genessee County; Knoxville, Tenn.; Long Beach, Calif; Scranton, Pa., and Lackawanna County; Syracuse, N. Y., and Toledo, Ohio.

50,000-100,000: Bethlehem, Pa.; Evansville, Ind.; Jackson, Miss, and Hinds County; Lynn, Mass., and Racine, Wis.

25,000-50,000: Bangor, Maine; Lubbock, Texas, and county; Montclair, N. J.; Norwalk, Conn.; University City, Mo., and Warren, Ohio.

10,000-25,000: Aberdeen, Wash., and Grays Harbor County; Bristol, Pa., and Bucks County; Centralia, Ill., and Marion County; Greeley, Colo., and Weld County; Huntsville, Ala.; Pine Bluff, Ark., and Jefferson County; Shelton, Conn.; Staunton, Va., and Augusta County, and Wilmette, Ill.

5,000-10,000: Jasper, Ind., and Dubois County; Perry, Okla., and Nolde County; Solvey, N. Y., and Springfield, Vt., and Windsor County.

2,500-5,000: Geneva, Ala., and county; Litchfield, Minn., and Meeker County, and Little Ferry, N. J.

STOCKHOLM . . . . . the Park City

By RODGER L. SIMONS

This setting is so entirely natural that one scarcely suspects it of having been carefully laid out and cultivated by experts of Stockholm's park department.

IF YOU were to spread a map of Stockholm on your desk and then, dipping a large brush in a can of green paint, were to flip it sharply above the map, you would probably come reasonably close to approximating the park layout of that very interesting northern city. For the Swedish capital is just about as dappled with green as your desk map would be.

To the Swedes in general and the Stockholmer in particular, parks are not mere luxuries intended only to lend color to an otherwise gray city, or to provide featherbed jobs for the politically anointed. The parks of Stockholm are a manifestation of one phase, and a very interesting phase, of the Swedish national character. Despite all their streamlined modernity, the Swedes have an intense attachment for the open country and for green things. The most conspicuous symptom of this urge is found in the way the city closes up during July and August and its people embark on a mass migration into the country or to the seashore.

Parks Satisfy Bucolic Longings

The parks which dot Stockholm in almost unnumbered profusion are another aspect of this national predilection for the open and for greenery. During the non-vacation months, and throughout the year for those who must remain in town during the summer to run the street-cars, the hospitals, the postal service, etc., the Stockholm parks minister to the deep-rooted bucolic longings of the citizenry.

Despite the rigors of post-war travel, Stockholm is more choked with visitors this year than ever before. Every boat and bus, every plane and train, discharges eager and anxious visitors into an already woefully overcrowded Stockholm, people lured by reports of the charm and loveliness of the Swedish capital. Stockholm *is* an extremely pleasant city and the wealth of green parks, blended with the bordering blue waters, is what makes it so enchanting.

Long-Term Policy of Development

It is recounted that a passerby once stopped at an English churchyard and, contemplating the wonderfully fine lawn, asked of the gardener, "How does one achieve so perfect a lawn?" to which the old gardener answered, "Well, you have to begin about six hundred years ago."

Something akin to this could be said of the Stockholm park system. It is not the weary result of any last minute

Above: In Sweden children often can ski before they can walk, and the many small parks throughout Stockholm provide abundant proving grounds for the aspiring runners and jumpers.

Above right: Stockholm is a city of few big parks but many small ones, such as this stretch of flowers, rocks, and water.

Right: Sand boxes, paddling pools and play areas are found in parks throughout Stockholm. This one is on Norr Mälarstrand, with the Vestarbron Bridge in the distance.

Below: Under the direction of the Office of Parks, one of the old timber houses of Stockholm has been converted into a play-house for children.

Below right: With Summer daylight lasting until nearly midnight, the Stockholm parks are a charming setting for folk ballads and recitations.

"something ought to be done about it" municipal hysteria. Stockholm nestles on innumerable islands and inlets. Her park system is the end-product of a systematic recovery of ground from the open waters, a struggle which has been going on for hundreds of years. If you study a map of the 17th century Stockholm, you will find that large expanses of water have disappeared and have been replaced by parks, while many canals and small bays of the past are now flowered walks. To dip the pen briefly into statistics, during the past five years the park area of Stockholm has more than doubled.

Number of Parks Increasing

Meanwhile, the Stockholm Park Office has busily gone on, arranging new green oases throughout the city and in the very extensive suburbs. In many cases this has involved no more than restoring the original landscape and tidying up what had been allowed to deteriorate. But often the program has aimed at creating entirely new parks, with playgrounds for the youngsters and lawns, groves, and paths where older people can stroll and rest.

An example of this reclamation policy is found in a stretch of park and playground known as Norr Mälarstrand. Wharves and commercial structures along a mile of lakefront have been cleared out and are now prohibited. The shoreline has been restored to its natural beauty, with alternating groves and meadows. Trees, bushes, and other vegetation indigenous to the country have been replanted along the bank, and between the road and the stone-strewn waterfront are small playgrounds for children and benches for their elders.

In a less enlightened age, the enthusiasm of the park planners often found expression in a craze for unrestrained botanizing. The principal objective seemed to be to crowd into the park as many different kinds of plants as possible. This is still to be observed in many of the older parks, where trees and shrubbery, both native and foreign, are jumbled together in a comparatively small space and often with no regard for the over-all effect. The general impression might be likened to that of a "dime-store" window.

Today's "Few-But Good!" Philosophy

In the planning and planting of today's parks and gardens, the Stockholm authorities appear to have been guided by the philosophy, "Few—but good!" Far fewer varieties are used, but the objective has been to present more specimens of each variety, grouping them in larger or smaller clumps, in a design which will have a certain rhythmic effect. Consideration has also been given to the question of over-all botanical appropriateness. This is particularly the case where the problem becomes one of restoring, repairing, or supplementing an expanse of primeval scenery.

Frequent Changes in Flower Beds

With regard to the laying out of flower beds, Stockholmers believe that more appealing effects are achieved by displaying fewer varieties and putting them in larger plots. The exhibiting of only a few varieties of flower, however, does not result in any risk of monotony, for the Swedes change them with almost bewildering frequency. As soon as any flower bed has passed its prime, and even before it has gone far on the way to senescence, laborers of the park department are there, carefully removing it and replacing it with something scheduled to reach full bloom in a few days.

Historical Spots

The Swedes are born antiquarians and their intense feeling for the past finds outlet in an interesting aspect of Stockholm park policy. To venture only one instance out of many, in the southern part of the city on a high, rocky bluff overlooking the harbor, twists a little old street called Fjällgatan. Lying on and near this street are two quarters containing small timbered houses from the 18th century. They are painted in deep red—a vestige of the time when Sweden was the world's top producer of copper—and are bordered with vertical wooden fences, over the high tops of which spread lilac bushes and fruit trees. This group of cottages, with their little gardens of old-fashioned plants, a quiet island of the past amid the famed modern architecture of Stockholm is being preserved for posterity by the Office of Parks.

Focal Point of Community Gatherings

It is the conviction of Stockholm's park administrators that the city's parks need not be maintained only as playgrounds for children or as placid places for elderly couples to sun themselves. The parks are made focal points of community entertainment. One of the most popular features is the program of park concerts, usually given during the lunch hour or on summer evenings. These concerts are performed at about 20 places throughout the city, by bands specially recruited and rehearsed for this purpose. One is the Promenade Orchestra, a string group of 40 players, and the other is the Park Orchestra, a 40-piece brass band.

Another form of open-air diversion, more recently introduced and growing in popular acceptance, is the schedule of evening ballad programs. These offer not only songs, but also recitations and occasional short plays.

Dancing in the parks is still another feature. On Midsummer Eve, the biggest day in the Swedish calendar, many Stockholmers migrate to the archipelago or to the countryside in boats or cars decorated with leafy branches. But for those not in a position to leave the city, the park administrators arrange dances and seasonal festivals in squares and parks throughout the city. Midsummer Eve poles are erected, from which hang great green wreathes, and tens of thousands of happy Stockholm folk sing and dance about them until the rising of the sun.

The city's over-all park policy has been aptly summed up by its chief, Holger Blom: "We place heavy significance on architectural designs," he says, "but we have a certain weakness. We like working on details. A city grows and grows, but human beings are little, if any, bigger than they have been for the past few thousand years. Planning a city, and in particular planning a park, has to be done on a human scale. Man is a romanticist. This longing for romance is strong within him. We should be able to satisfy this longing when we build our parks. And that is what we are consciously setting out to do."

Lectures Announced On Urban Decentralization

A FREE series of public lectures will be held in March by the Bureau of Urban Research of Princeton University. The lectures are entitled, "Cities in Transition—The Cause and Consequences of Metropolitan Decentralization."

The program and speakers for the series are as follows:

Tuesday, March 2, 7:45 p.m. "The Changing Population Pattern of the Modern City"—Philip M. Hauser, Professor of Sociology, University of Chicago.

Thursday, March 4, 4 p.m. "Time, Space, and the City's Physical Readjustment"—Henry S. Churchill, Architect, City Planner.

Monday, March 8, 4 p.m. "The Economic Theory of Urban Expansion"—Homer Hoyt, economist consultant and member of firm of Homer Hoyt Associates.

Wednesday, March 10, 7:45 p.m. "Governmental Problems of Urban Decentralization"—Austin J. Tobin, Executive Director, the Port of New York Authority.

Thursday, March 11, 7:45 p.m. "The Defense of Cities in Aerial Warfare"—Ansley J. Coale, Assistant Professor of Economics, Princeton University.

A Caterpillar diesel No. 212 motor grader removes snow in Baltimore.

Baltimore's Snow Removal Program

Moderate weather is no excuse for unpreparedness

By NATHAN L. SMITH
Director, Department of Public Works
Baltimore, Md.

MODERATE winter weather, such as Baltimore enjoys, does not necessarily permit relaxation of snow removal standards. Quite the contrary, the inconsistency of these snowfalls, despite their lighter character, means that crews must be doubly alert. Baltimore has been forced to work out several plans to meet varied conditions.

The department owns 67 reversible-type Good Roads snowplows, each with a 10-foot moldboard 24 inches high. It also owns one Nelson snow loader and approximately 200 trucks of various sizes which can be used for hauling snow. This equipment is supplemented by rentals if necessary.

The Public Works Department's snow-plowing equipment consists principally of the manually operated type. Some of these have outlived their effective usefulness, but served a purpose during the war years when it was impossible to replace them. As equipment now becomes available, we are replacing them with hydraullically operated plowing units.

All personnel connected with the snow-removal program receive detailed instructions for each of the plans, both day and night operations. These instructions including details for alerting men in the event snow should reach a depth requiring operations between the hours of 5 p.m. and 8 a.m.

Snowfall Operation

Where a light snow is involved and plowing operations are unnecessary, but icy conditions prevail, cinders mixed with calcium chloride are spread by hand at the intersections on the grades.

A medium snow will generally cause little trouble on main or heavily traveled arteries, because traffic does not permit the snow to reach a depth where plowing would be effective. In the outlying or suburban sections, however, it is necessary to plow in order to provide ingress and egress. Twenty-two plows are used for this operation.

In case of heavy snows, 2½ inches and over, all plowing equipment is utilized to open primary and secondary streets. Plowing is continued until all streets are passable and traffic is moving as smoothly as possible. After this work has been completed, all plows are removed, with the exception of a few held for emergency complaints and conditions.

Removal operations are started after plowing is complete, usually on the morning following a fall. To perform this task, approximately 1,000 men and 250 trucks, which comprise the construction and maintenance day-labor force of the department, are used. In extreme cases, this force is supplemented by hiring emergency laborers and renting contractors' equipment. This is essentially a hand-loading operation, although the city does have one snow loader and, during an exceptionally heavy storm last winter, rented four additional units of this type.

Rock Salt Accepted

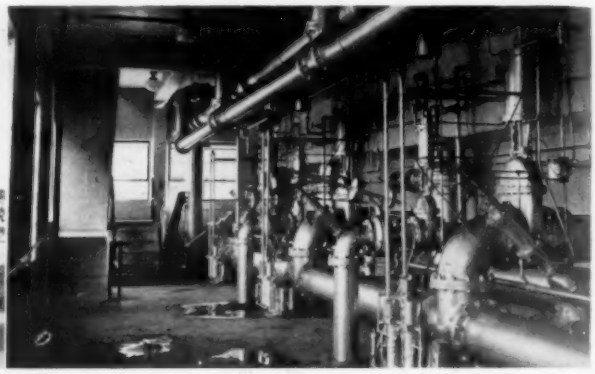
An ordinance introduced and adopted many years ago has, until the present, prohibited the use of rock salt on city streets. The city charter, as amended and adopted by the voters, effective May 20, 1947, has cleared the way for the use of this material as a disintegrating agent. Our plans call for the purchase of four mechanical spreaders to be used to distribute salt on designated areas in an effort to eliminate the icing conditions which generally accompany a light snowfall. If this method proves satisfactory, we will no doubt expand this program during subsequent years and ultimately reduce to a minimum the manual spreading of abrasives which we now employ. Certain mechanical units, when used to spread cinders and sand, prove less effective than hand spreading because there is a tendency for the material hitting at an angle on a glassy surface to bounce to the road edge, rather than remain in the traffic lane.

The salt would of course eliminate a troublesome spring maintenance problem of cleaning away the sand and cinders used for skidproofing.

A Convertible Softening Plant

Sarasota, Fla., breaks precedent by building a zeolite water-softening plant following rapid sand filter designs, anticipating that the present well fields will be abandoned in favor of an impounded surface supply

Sarasota's new zeolite gravity softening plant. It was designed so that another wing can be added in the future and harmonize with the building's architecture.



When the time comes for a change-over, the pipe gallery will require only minor alterations to transform it from zeolite treatment to rapid sand filtration.

THE LEOPARD that can change his spots has nothing on the Sarasota water-treatment plant which can change from zeolite softening to rapid sand filtration with only a whisk of the zeolite. This growing resort city recently completed a one-mgd zeolite water-softening plant designed to condition the exceptionally hard groundwater in that area. However, this plant has been designed in anticipation of the time in the immediate future when the city will abandon its present groundwater supply, push a transmission main some 18 miles to the Myakka River, and tap a surface supply that can be impounded there. Three years ago Sarasota, realizing that its existing pressure-zeolite plant could not furnish enough water for the city's needs, retained the consulting firm of Smith and Gillespie, Jacksonville, Fla., to study this problem.

These engineers recommended the Myakka River, but estimated that the development would cost more than the city could raise without an excessive increase in its water rates. As an alternative, the engineers suggested that the city extend its zeolite softening facilities in such a way that they could be changed readily without expense into a rapid sand filter plant. This proposal the city accepted promptly.

In the new plant the designers used the same type of filters used in the standard automatic gravity plant. As automatic rapid sand filters they will treat water at the conventional rate of 2 gallons per minute per square foot of filter area. During periods of zeolite softening, the rate is only 1.1 gallons per minute per square foot. The same type of filter controls will be used in rapid sand filter operation that now controls the zeolite softening operation. The tank now used for brine storage in connection with regenerating the zeolite will simply have its duties changed to that of a filter wash-water tank.

First to Regenerate with Sea Water

This is not the first time that Sarasota has adopted some new water-treating method. A number of years ago, when this city began using zeolite softening, installing the Permutit pressure softeners, it was the first municipality to make use of sea water to regenerate the spent zeolite rather than using brine made from purchased salt. Since then, the use of sea water for this purpose has spread to a number of other coastal cities.

At present, Sarasota draws its supply of water from three groups of flowing artesian wells. One group of five located at the plant area can produce 1,400 gallons per minute. Five pumps deliver the water from this field to the plant proper. Two of these are Fairbanks-Morse pumps rated at 275 gpm against a head of 50 feet. The other three are DeLaval pumps, capable of furnishing 600 gpm against a head of 40 feet. Another group of four, located a half mile north of the plant, can yield 800 gpm. Four Aurora pumps, each rated at 200 gpm against an 80-foot head, deliver the water to the plant. And two wells west of the plant, to be put into operation soon, will provide water at a rate of 900 gpm. Each well field has its own transmission line and has its yield measured by a separate Builders-Providence orifice meter.

How the Plant Works

When the water enters the plant, it goes to three Infilco Multiclone aerators, each rated at a maximum of 900 gallons per minute. These aerators reduce its hydrogen sulphide content. From there, the water proceeds to the raw-water storage reservoir capable of holding 365,000 gallons. This reservoir was in place and used by the old softener plant. However, the Multiclone aerators replaced old tray-type aerators which

were impossible to clean without draining the entire reservoir.

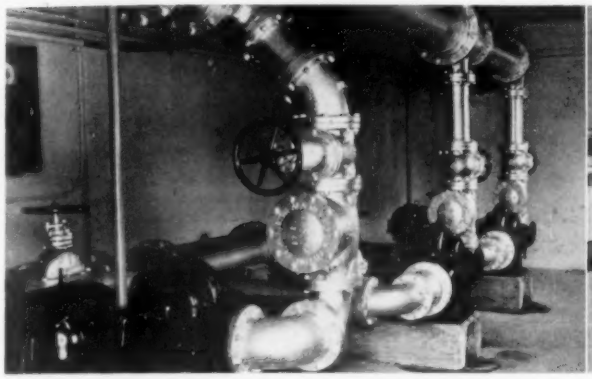
The water enters the new plant at the basement level, where three Aurora pumps direct it through the various treatment phases. These pumps, protected by M and H gate and check valves, have multiple functions: two of the pumps supply water to a header that admits water to the beds for softening or rinsing after regeneration. The third pump supplies water for backwashing before regeneration. The pump reservoirs, and enters the distribution system. A Westco pump delivers the water to the chlorinators. When the water leaves the plant, it carries a residual of 1 ppm which drops to 0.2 at the outskirts of the system.

Before leaving the plant, the zeolite softened water, with a compensated hardness of 1 grain per gallon, is blended with the 70-grain raw water amounting to 6% of the softened water volume. This ration produces a finished water roughly of 100 ppm hardness.

tioned previously, this tank will become a wash-water tank in the rapid sand filter operation.

A clear well under the softeners with a capacity of 60,000 gallons floats on the other two reservoirs and can be valved off to operate by itself if it should be necessary.

Because of the extreme hardness of the raw water, the operation of the zeolite softening plant shows that it uses a relatively heavy amount of raw water in comparison to the finished water pro-



These pumps transfer water in the plant. Two supply water to the zeolite beds for softening or regeneration. The third is used for backwashing the beds.

At first one would never know these filters from the conventional rapid sand filter type. The design makes a change from zeolite to sand easy, if the need arises.

and filter operation is entirely automatic. However, they can be operated manually by a set of Allen Bradley push-button controls if necessary.

Like Rapid Sand Filters

The zeolite softeners are like any sand filter, even to the use of a surface wash attachment. However, this is now used to distribute the sea water that regenerates the spent zeolite. The beds carry 42 inches of zeolite underlaid with 12 inches of gravel. Originally, it was planned to use greensand, but the engineers substituted synthetic carbonaceous zeolite with a higher exchange capacity. The softeners have a surface area of 15 feet by 15½ feet. The zeolite softeners, plus the controls and interconnections, were all furnished by The Permutit Company. Simplex rate-of-flow controllers govern the softener operations. There is one of these on each soft-water effluent, one on the rinse-and-brine header, and one on the backwash header.

All softened water goes to a pair of finished water reservoirs, each covered and capable of holding 300,000 gallons plus one small reservoir under the plant which holds 600,000 gallons. The water is chlorinated by a Wallace and Tiernan chlorinator as it leaves these

As mentioned previously, the softeners are regenerated by sea water pumped through a battery of pressure sand filters and onto the beds. This sea water goes through these filters at the rate of 3 gallons per square foot per minute without chemical pretreatment to induce coagulation. However, when it is coupled with chlorination, it removes the possibility of bacteriological contamination. In the present plant arrangement, there is a battery of six pressure filters that give the sea water its pretreatment. Four were in place prior to the plant construction, and two were installed with the present improvements. As mentioned, the sea water is chlorinated prior to use, so that it carries a residual of 0.5 to 0.75 ppm.

The pumps that bring the sea water to the plant are designed to serve the needs of the four original softening units, and are operated only half the time. By adding two additional filters and a brine tank and by operating continuously, the pumps can serve both plants. The operation of the pumps is controlled by the water elevation in the newly erected brine tank. As men-

Top right: Multicone aerators remove hydrogen sulphite from the raw water before going to storage. Right: Two elevated storage tanks serve the plant.

duced. A typical sequence of operations is shown in accompanying table.

Thus, owing to the extremely high degree of hardness of the raw water, the plant must handle a total of 78,540 gallons of raw water from the ground to produce 55,650 gallons of finished water. On a percentage basis, this means 71% of the groundwater pumped goes to distribution.

Use of Sea Water More Economical

The use of the sea water also offers some interesting comparisons. As the table shows, for every gallon of finished water supplied, the plant must receive and handle approximately a half gallon of sea water. On the surface this appears excessive, but one should remember that the sea water is a cost-free source of regenerating salt. On a dollars-and-cents basis, it is much cheaper to use sea water than to purchase salt and prepare the brine artificially.

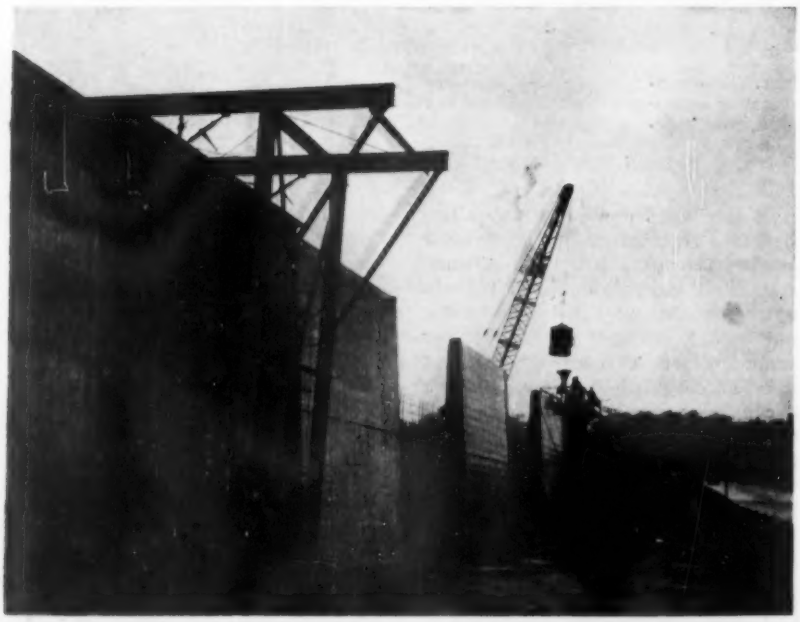
	Rate	*Water used*
Softening run	3½ hours @ 250 gpm	52,500 gals.
Washing run	7 minutes @ 1,380 gpm	9,660
Regenerating run (sea water)	40 minutes @ 735 gpm	29,400
Rinsing run	18 minutes @ 735 gpm	13,230
10% raw water blend		3,150
Finished water supplied		55,650
Groundwater handled		78,540
Total ground, plus sea water handled		107,940

Furthermore, the use of the sea water cuts the chemical handling costs since there is no longer any need for salt storage. It also reduces the overhead of salt handling.

The plant is operated by E. T. Carlson, water superintendent, under the supervision of Ross E. Windom, city manager.

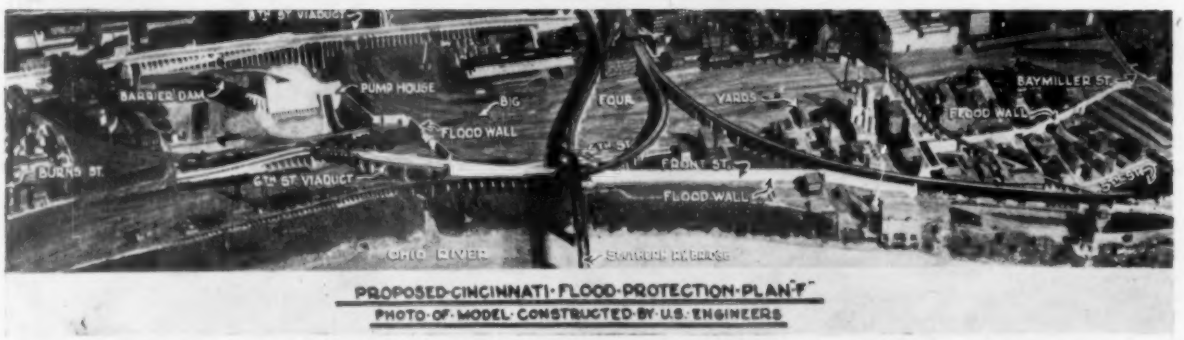
Cincinnati's Mill Creek Flood Control Program

New floodwall protects an important portion of this city's business area. It will hold back an 80-foot flood



THERE will be less danger of floods in the Mill Creek Valley of Cincinnati, Ohio, now that the city's flood control program is nearing completion. The protection will come from a new wall high enough to hold back an 80-foot flood in the Ohio River, and a pumping station with enough capacity to hold the flood waters of Mill Creek down to a 52-foot level, or low enough to avoid inundation of any developed property. The wall and pump station were designed and built by U. S. Engineers on property furnished by the city.

The program was instituted after the disastrous 1937 flood, which resulted in property damages in excess of fifty million dollars. This damage was caused by the flood waters of the rampaging Ohio River backing up the highly industrialized and totally unprotected Mill Creek Valley. The new flood wall, which ties into high ground on either side of the valley, will prevent a repetition of this disaster.



Above: Before beginning the work, U. S. Engineers made this detailed model of the Cincinnati flood control project. Above left: Portable steel forms help make the work go forward smoothly.

For the Community That Wants More Factory Payrolls

The need for some form of economic-development activity at the local community level is now so widely accepted in practice that there is little occasion to argue it in general terms in these pages. In industrial areas, the adding of man-years of factory employment is recognized as an almost essential underpinning to any realistic city planning. Yet the particular forms which the development activity may take are still on trial. The accompanying discussion of them is based on the author's studies as managing editor of *Fortune* magazine and his more recent experience as a consultant on economic development.

By **RICHARDSON WOOD**
Business Consultant
New York, N. Y.

IN THE literature of economic-development work much emphasis is put, and quite properly, upon the assembly of data. But I sometimes suspect that this phase of development work is given an undue share of emphasis because (a) it is relatively inexpensive and easy to do, (b) its results are impressive, especially to those unfamiliar with library resources and academic processes, and (c) it scarcely ever gives any positive offense to anyone.

General background information is, of course, important in all preliminary studies of economic possibilities. But it should be recognized that many classes of relevant information are not required in terms of a local community taken by itself. Information on raw materials, for instance, must often be gathered on a world scale. Waterways, airlines, railroads, and highways are studied on international, national, or regional scales. Fuel and power sources are common to large areas.

For practical purposes all such topics can be examined in the documents collected at the state and national levels by governmental agencies, by universities, and by trade associations and their like. Because these sources exist, there is little need for local communities to make stockpiles of data. Rather it is important to provide for the easy flow of information when it is called for. Usually this can be arranged through the local library, sometimes supplemented by help from academic workers.

A Community "Who's Who"

There is one class of information, however, that is unique to each community: a "who's who" of its own people. By this I mean much more than the usual statistics on age, sex, education, religion, and occupation. I mean more than can usually be found in the reports of credit agencies on those prominent enough to warrant reporting. I mean something that might be described as a catalogue of individual skills, interests, and hopes.

Information of this sort perhaps can never be reduced to a cold inventory. Nevertheless I wish to underline the importance of information about the human potential of the community. What can the people do beside what they are doing? What would they want to do if given the opportunity? The best answers possible may be sketchy and incomplete, but it is out of such information, far more than out of the pages of U. S. Census publications, that the future of any community will be built.

Knowing the People

The first duty, then, of the economic-development man is to get himself and to keep himself as well acquainted as possible with the people of his community. He can do this directly by interviews conducted on a sampling basis. He can do it indirectly through those who know well certain segments of the local population: politicians, journalists, ministers, labor leaders, employers, and so on. The preparation of an industrial directory, giving briefly the history and employment characteristics of each production unit, is often a useful way to organize elementary economic information about the people. But in some way or other and in all ways that are practical, the people of the community must be known.

What is the community? More specifically, what is the size-range of communities best suited to effective development work? The answers to this question depend largely upon the kind of development work one has in mind.

For most purposes the largest area subject to effective development work is the "region." Beyond that there are few tangible forces that can be brought to bear upon development opportunities except the fiscal and general economic programs of the national government, and these are outside of the range of the present discussion.

A region can be, and most often is, within a state. Pennsylvania has several easily recognizable regions: the anthracite area, the southeast farming country, the Pittsburgh district, and so on. Yet fairly homogeneous regions can also include several states or parts of states, as in the case of the great river valleys.

At the regional level, a maximum use can be made of general information of the statistical type and of promotional effort involving advertising, publicity, documentary films, and traveling representatives of the territory. Attempts to arouse a wide interest can pay off because many an interest can be satisfied somewhere within the region being promoted. In the Chicago and Cleveland areas, for example, the utility companies have found it well worth their while to sponsor large-scale programs designed to attract branch plants and new industries from sources in all parts of the United States and even from sources abroad.

Fostering New Industries

The effective fostering of new and small industries, on the other hand, must be executed on a smaller scale. It can be organized on a regional scale, and it can make good use of national and international centers of scientific, technological, and marketing information. But the application must be at the local community level; for the man doing such work must know the people well enough to know their abilities and aspirations, and must be able to foster the opportunities thus offered. It is a highly personal job, and no one can do

it adequately and spread himself too thin.

Again, what is a community for these purposes? Its limit on the large side is probably a place presenting all the cases which a well-knit team of three or four men can handle. Its limit on the low side is the area that will support one economic-development worker as measured by the number of man-years of employment his activity can create.

Much larger groups, of course, can handle programs involving promotion and branch-plant solicitation. I am speaking here only of new business development.

The Developer's Qualifications

In more familiar terms, the city of 50,000 to 100,000 can usually keep two or three men busy full time—under presently prevailing conditions of acceptance of such work. Cities of 25,000 to 50,000 can use one man. Below that size, neighboring cities and towns can group together to provide a man. In cities that are much above the 100,000 size, it is well to consider how many "communities" the city represents. For city-planning purposes, Chicago has been regarded as more than 50 communities. New York may be regarded as composed of the shipping interests, the financial community, the fashion industry, the communications group, and so on; with further subdivisions within these occupations. In any case, for the purpose of fostering a steady and well-balanced growth from within, some such division into comprehensible and workable groups is essential.

The Problem and the Personnel

At this point it may seem superfluous to explain the importance of what I have called "fostering new and small industries." But I have often found that while a program to attract branch plants and outside capital is looked on as a general blessing and a proper activity for all true boosters, the stimulation of economic growth from within the community is either overlooked or sidestepped. And this attitude persists in the face of many brilliant individual examples of self-help among communities and despite the massive propaganda of the Committee for Economic Development.

It is, therefore, important to emphasize that in recent years in this country, in contrast to the days of the moving frontier and the filling up of the land behind it, most growth in most places comes from inside. In 1927 a census-type study of newly established industries was conducted. This study showed that more than three-quarters of all the new establishments and more than one-half of all the employment generated by these establishments in their first year came from newly organized industries rather than from branch plants.* It may be assumed that the net growth of the new industries in the following years, after allowing for failures, increased the employment they gave at a faster rate than the new branch plants increased theirs. Branch plants are not always born full grown, but they are seldom seedlings. And there are many cases when branch plants, for all their big-name glamour, are not as desirable as home-grown businesses.

Locally established industries, then, are the bread and butter, the meat and potatoes of economic-development work. How can they be brought into being? How, once in being, can they be fostered? Since the problems raised by these questions are as various and as complex as free enterprise itself, not even the beginning of an attempt to set them forth can be undertaken here. But it can be readily seen that the men and women who are to be entrusted with development work of this kind must be unusually able and unusually ambitious.

As a general rule I believe that a person undertaking such work should have some training in at least one of these subjects: engineering, finance, marketing, or journalism; and should, through reading, experience, or friends have a smattering of the other subjects mentioned. But the character of the person is far more important than the training. He must have the courage to tackle a job for which no present training is adequate. He must value opportunity far more than immediate reward. He must be a politician with the makings of a statesman. He'd better be young.

Granted that such paragons can be found and that other paragons can be summoned to coach and guide them, on whose payroll do these economic developers go? So great are the possible economic returns, and so low in relation to them is the cost of grassroots development activity, that many possible sponsors will be found in every community.† Among them all, two at first sight seem most obvious: the city administration and the Chamber of Commerce.

Both of these sponsors have disadvantages that I believe should be carefully weighed. The city administration, besides offering the customary hindrances to initiative, will always have difficulty in rewarding its field workers adequately. While development jobs should not pay much at the start, men of the needed verve and competence will often not be attracted to them unless salaries can keep pace with results achieved. Since the job demands and develops the talents of a genuine entrepreneur, the rewards, omitting those cases where workers will accept prestige in lieu of cash, must match the rewards of entrepreneurs elsewhere. This is very difficult for a city administration to manage. Even if a contractual arrangement were acceptable, it would depend upon a generally satisfactory method of measuring results—no easy task.

Chambers of Commerce are already loaded with a heavy schedule of traditional obligations, only a few of which have a direct bearing on the creation of new man-years of factory or agricultural employment. Chambers, moreover, tend naturally to be "merchant-minded," and thus frequently interpret their assignment more along promotional and less along engineering and economic lines than the job seems to me to demand. Usually chambers of commerce are more successful in this work when they set it up as a separate autonomous activity instead of trying to fit it in alongside their other tasks.

These considerations do not rule out city administrations or chambers of commerce as financial sponsors or even as direct managers of economic-development work, but they do indicate that work of this sort may often be best undertaken either by individual large service companies (utilities, railroads, banks, newspapers, or merchants) or by special associations of these interests formed for the purpose of promoting economic development.

A promising phenomenon of the latter sort is the "industrial foundation," a form of organization of which the Louisville (Ky.) Foundation is a long-established example and the Gary (Ind.) Industrial Foundation one of the more recent. This type of organization, as the name implies, usually has access to capital funds, and usually its directorate overlaps that of the local chamber of commerce. Its principal advantage is a certain independence of operation and a freedom from any obligation save that of creating and continuing employment in its area. Capital funds are not, in my opinion, essential to the success of this sort of operation, although they do make possible a number of useful short cuts. Operating budgets can be quite modest, say $25,000 a year for a city of 100,000.

Such sponsors, though free, need not operate in isolation, indeed, they scarcely could operate all alone even if they wished to. They can and do call upon the services of nearby universities and technical schools. And they cooperate with all existing civic agencies concerned in their work. They are now setting, I believe, a pattern that will be widely followed in the future.

* Because of post-war adjustments, branch-plant establishments seem to have been much higher than normal in 1946 and 1947. There is reason to believe that 1927 represents a more usual state of affairs.

† In a forthcoming article in the *Harvard Business Review*, I have discussed costs, returns, and economic motives for sponsorship at some length.

Detroit Holds Paving Costs Down

. . . by grouping street paving improvements together and using money-saving design practices

DETROIT needs new streets. In a city where the automobile is the pulse of its economic life, officials recognize this need and are taking steps to provide these streets at a reasonable cost.

New home owners have created the largest demand for these streets—particularly owners of homes in the moderate-price range. These owners wanted clean, comfortable streets, harmonious with pleasant living, and the city decided to provide them at a reasonable price.

Paving Programs Grouped

To do this, City Engineer G. R. Thompson and Engineer of Streets W. J. Wallace shaped a series of paving programs. They grouped together those streets in the same neighborhood and provided a relatively large project attractive to the contractors. By gearing their work to a mass output, they allowed the contractors to do the work for a low unit cost, yet obtain at the same time a reasonable profit. By early fall, the city had called for bids on some ten contracts, totalling about 550,000 square yards and varying in size from 20,000 square yards to 90,000 square yards. The work covered 134 streets, with single projects ranging from 7 to 22 streets.

At the same time, as has been the case in many instances today, because of price and other considerations, the city did not award all its contracts. It did succeed in placing more than 500,000 square yards in the hands of the construction firms.

Contractors' Work Made Easier

Grouping the streets made the work particularly attractive. Contractors were able to eliminate long, expensive moves from job to job and were able to plan construction work efficiently enough to take advantage of the many money-saving operations not possible on a small job. On short streets the contractors used transit mixers, whereas on longer jobs they employed the standard paving mixers.

As a matter of permanence, the city was able to build weather- and salt-resisting characteristics into the pavement by using air-entrained portland cement concrete. Since the use of chlorides for snow removal and ice prevention has a long history in Detroit, air-entrained concrete is a standard practice in Detroit paving.

Other design features helped cut the cost of the concrete paving. Originally the city planned to use some type of stabilized base construction, with separate concrete curb and gutter. Studies by the city engineer's office disclosed that the city actually could build a concrete pavement at a lower cost. The engineers felt further that the concrete pavement with an 8-6-8-inch cross section, with the integral curb acting as the outer edge thickening, provided favorable structural qualities and an attractive appearance.

To keep the cost down further, the Detroit engineers eliminated expensive expansion joints everywhere except at the intersections. If the block were exceptionally long, they supplied one at the center of the block. To allow movement of the slab during changes in temperature, they supplied contraction joints spaced 20 feet apart.

At intersections they called for a straight curb and blended it to the roll type within about 5 feet of the end of the radius. All integral curb was hand-finished. The 7-inch height of the rolled curb was, of course, reduced for driveway and alley entrances.

The 7-inch height is mandatory. Detroit has considered designs in which the integral curb has been reduced to 3 or 4 inches to enable cars to drive over the curb without injuring them. If this lower height is used, entrance driveways can be built at any time after the pavement has been laid without breaking the curb.

Wide Acceptance

The new paving program has received almost universally favorable comments. The engineers like it because of its simplicity, economy, and neat appearance. The contractors like it because it allows them to do a good job at low cost and still make a fair profit. The property owners like the appearance of their streets and are particularly pleased that their pocketbooks are not being pinched too greatly. The cost of the improvements has averaged only about $5.50 per assessed front foot. Detroit officials expect to see the program continue for the next few years.

Below: Cost figures by Detroit engineers indicate that this type of paving compares economically with other so-called "secondary surfacing."

Above: This mechanical curb roller, an entirely separate unit, follows the Lakewood finisher by about 20 feet under its own power and makes curb building easy.

A County Governed On Up-to-Date Budgetary Facts

By JOHN E. CASH
Auditor, Essex County
Newark, N. J.

A REVOLUTION in budgetary accounting has taken place in the last 10 years in Essex County, one of the two first-class counties in New Jersey. In 1931, all bookkeeping work was decentralized, each department and institution doing its own. The Auditor had a chief clerk and secretary, audited no vouchers, controlled no expenditures, and saw no payrolls. The Board of Chosen Freeholders was forced to play its role by ear, for there were no adequate accounting notes provided them.

Yet statutes required that the Auditor's Department exercise supervision over the receipt and disbursement of County money. A survey of conditions resulted in the establishment of a real auditing department, directed to develop and provide the Board with up-to-date records and financial information. To have the information not only timely, but sufficiently detailed for guidance in county costs and in formulation of future policies, necessitated breaking down expenditures into individual items.

Present-day enlightened government officials recognize this as a job for accounting machines. The "thirties," however, were notorious for retrenchment. Machines were out of the question when the new procedures were formulated. The work was done manually by bookkeeping and clerical personnel assembled from other departments, and reports were, of necessity, several weeks late. This lag was quickly obliterated in 1939, when our first Burroughs budgetary accounting machine went into action. It was joined by a second in 1942 and by a third for auxiliary service in 1947; another is on order to replace the 1939 machine. Where before, the Board of Freeholders received only two financial statements a year, the figures several weeks old, they now receive monthly reports in detail for the county institutions and for every department, with comparisons of year-ago figures for the same period. Every department and institution is furnished with a detailed statement of their appropriations on a comparative basis of expenditures of the previous year. Trial balances are taken monthly on all accounts. Machine records of revenues received are maintained.

Our accounting and financial procedure has been examined by representatives of other counties. The system of budget control has been used as a model, with forms exhibited at conventions, and adopted by other governmental divisions. The complete system of control begins with the purchase order issued by the Central Purchasing Department. This order, before its release, comes to the Auditor for certification as to availability of funds. An immediate commitment is set up, and the certified purchase order is returned to the purchasing department, which then releases the original. Thus the Auditor's commitment is a charge in advance of the authorization to purchase.

After the submission of bids and the award and delivery, a report of the receipt of the commodity, together with the purchase order, is used to audit the bills. Next, the bill goes to the Accounting Machine Division, where the payment is charged to the appropriation. In the event of a partial shipment on the order, the partial payment is charged. Bills are accumulated and referred once a month to the Board of Freeholders for approval for payment. They are then turned over to the Treasurer, who prepares the checks which are countersigned by the Auditor. The checks are then sent to the vendors.

Includes Payroll

All personnel work is handled by the Auditor, whose Central Payroll Division prepares all payrolls from daily department reports of personnel changes. The payroll is sent to the Civil Service Commission for certification and returned for the preparation of checks by Addressograph. Personnel records, classifications, salary ranges, and related work are handled by the Auditor. The Division has five employes to handle the paying of the county's 2,200 employes. A fourth Burroughs, a machine with only a numeral and code letter keyboard, is used in maintaining the employes' earnings records for withholding tax purposes. This machine also prepares the central record of sick leave of all employes. This centralization of salary expenditures makes salary information available to the governing board for use in budget preparation.

The physical budget is prepared in the Auditor's Department and sent to the Board, which holds a series of hearings in arriving at final adoption. Thereafter, the figures are placed in the machine and the accounts established for the year's operation. This work, for a budget of $14,422,000 in 1947, is performed by eight clerks in the Audit and Accounting Division. The two Burroughs budgetary accounting machines are also used for control of capital and trust funds and for maintaining a record of outstanding bonds by maturities and purposes of each issue.

Other Gainers by System

The first purpose of all this work was to provide the county's governing body with data essential to informal management and good government. In the formulation of the procedure, the interests of four other groups were taken into consideration:

First, there are the department heads, the administrators, persons charged with the everyday conduct of the County's affairs. They need financial data primarily as a guide in the performance of their duties.

Second, there is a group consisting of investors who have a great interest in the county's condition and obligations, for the obvious reason that the value and safety of their investments will depend to a great extent on its financial condition.

Third, there is a group consisting of students of public finance, political scientists, and social scientists, who need financial information in pursuit of their studies.

Finally, the public is interested in the financial condition of the government. This group, during the recent depression years, concerned itself to a much greater extent than ever before in the financial affairs of governmental agencies.

These groups are not mutually exclusive. For example, an investor constitutes part of the general public, as does the political scientist and the social scientist. All classes have some common interest in the financial condition of the government. There are points at which their interests diverge. For instance, it might be well for the administrator to be advised of certain minor details of expenditure which might be of little value to anyone else. The political scientist might be interested in the distribution of expenditures by functions, whereas such a distribution may be of no interest to the investor. Therefore, it follows that the purpose of governmental accounting is to produce financial information in a form which is useful to all parties concerned. In Essex County we have tried to satisfy this purpose.

Four sets of Essex County financial forms. Top: Budgetary control form showing breakdown of line items. Upper left: Control, appropriation, and distribution of revenues anticipated and of revenues not anticipated. Right: Forms of general ledger journal. Lower left: Record of outstanding bonded indebtedness of the county. Bottom: Employes' earnings record and sick-leave record. Lower right: Budgetary accounting machines used in Auditor's Department.

The City Tells Its Story – X

By HENRY DAVIS NADIG, *Director of Public Relations, New York Regional Plan Association*

MPR short course at the U. of P. sets pace for study by officials

AT THE University of Pennsylvania on December 12, nearly 100 municipal officials sat all afternoon and through the evening to 9:30 (with time out for brief intermissions and dinner) listening to lectures on municipal public relations and participating in discussion.

They were attending the Short Course on Municipal Public Relations, produced by the University's Institute of Local and State Government, given by Henry D. Harral, Supervisor of the Institute's Municipal Assistance Service, and for which they received certificates from Dr. Stephen B. Sweeney, Director of the Institute.

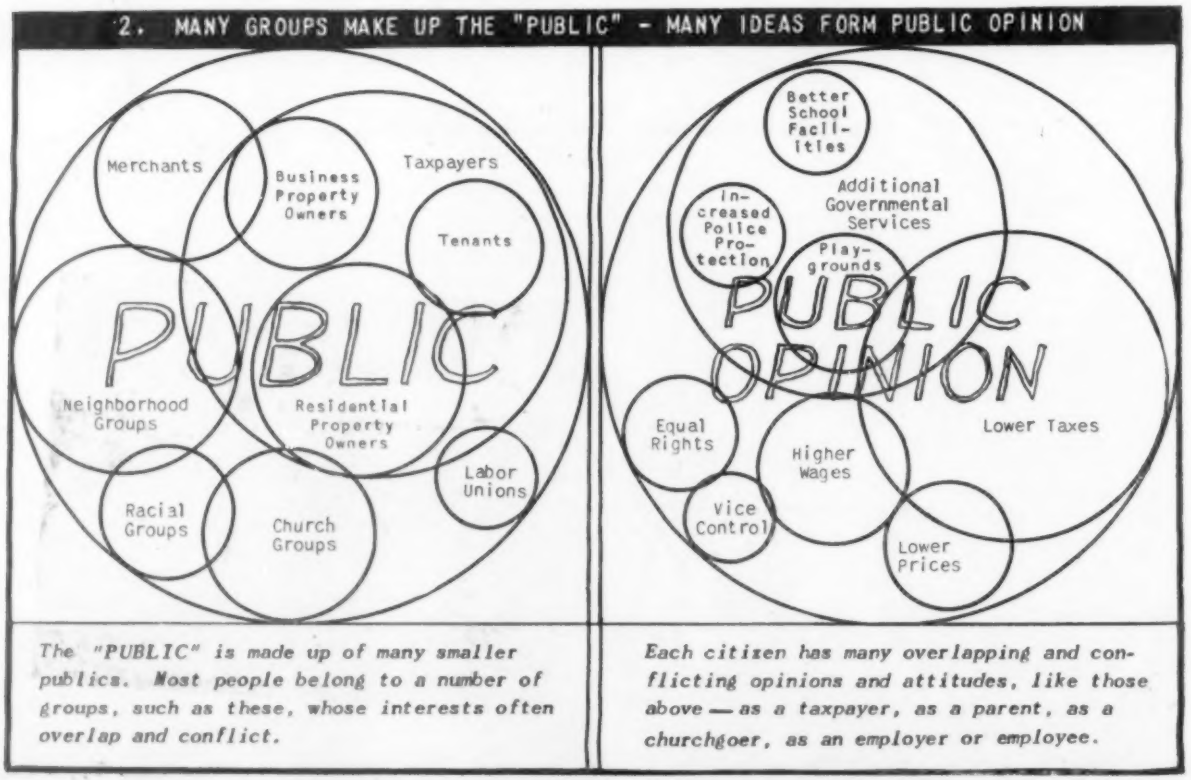
If this is not the first, it certainly is one of the first efforts of its kind to alert municipal officials to the principles of municipal public relations. Courses could well be given in most university towns and cities where the university setup lends itself to this kind of cooperation with officials. And doubtless, as interest grows and the desire for properly applying MPR widens, we shall see similar sessions elsewhere.

There was no thought, of course, of being able to cram into the short span of seven hours of lecture and discussion the whole spread of MPR and turning out experts. Even in this capsule-catching world of ours such a feat is unattainable. For two reasons: (1) MPR as a conscious art, as a policy, as a program based on proved principles, is too new; and (2) even if it were an old art, the expert is not one until he has practiced his art and proved its principles for himself.

You will be interested in the content and scope of the Short Course, and in the method of presentation, as well as in its reception. First, as to scope. The course was divided into eight parts, with a lecture on each. These were: Nature of Public Relations, Employe-Citizen Contacts, Governmental Procedures, Physical Appearances, Training Employes in Public Relations, Publicity and Press Relations, Municipal Reports, and Citizen Participation.

Program Given

Each official attending received an 8½-by-11 folder containing the program of the course and a four-page brief of the first lecture: first page, outline of highlights; second and third pages, illustrations (photos, drawings, charts); fourth page, summary of lecture.


2. MANY GROUPS MAKE UP THE "PUBLIC" - MANY IDEAS FORM PUBLIC OPINION
Merchants
Business Property Owners
Taxpayers
Tenants
PUBLIC
Neighborhood Groups
Residential Property Owners
Labor Unions
Racial Groups
Church Groups
The "PUBLIC" is made up of many smaller publics. Most people belong to a number of groups, such as these, whose interests often overlap and conflict.
Better School Facilities
Additional Governmental Services
Increased Police Protection
Playgrounds
PUBLIC OPINION
Equal Rights
Higher Wages
Lower Taxes
Vice Control
Lower Prices
Each citizen has many overlapping and conflicting opinions and attitudes, like those above — as a taxpayer, as a parent, as a churchgoer, as an employer or employee.

Reproduced here is one of the charts used in the first four-page brief in the Short Course on Municipal Public Relations given Dec. 12 at the University of Pennsylvania under the auspices of the Institute of Local and State Government.

With each new lecture an additional four-page insertion was distributed to the officials. Thus they could not only get the gist of the next lecture quickly, but by the end of the course they also had ready-made take-home notes, besides whatever notes they had made themselves.

Each of the page-one outlines was shown on a screen at the start of the lecture it concerned and most of the illustrations on the second and third pages of the briefs were shown also from slides along with other supplementary pictures to illustrate points of the lectures. These illustrations were drawn from many sources and carefully selected and arranged. They ranged from cartoons to covers of annual reports, from a photo of a police officer tidying up before a mirror to a chart on how money was spent in a Pennsylvania borough.

Sources of material for the lectures themselves and for reference were almost equally broad, and the work that went into preparation of the Short Course naturally represented a good many times the number of hours that it took to deliver the lectures. The result was a real achievement in research, correlation, and presentation.

The importance of developing a municipal public relations program, a point stressed so often in this department, was emphasized in the first lecture, which suggested a survey of public attitudes, an appraisal of governmental operations from a candid analysis, and an effort to correct or eliminate whatever unfavorable attitudes have been found to exist.

I like the definitions given in the first brief of four things that are often confused and misapplied in connection with municipal public relations. These definitions: "*Public opinion* is the verbal expression of attitudes which citizens hold toward their government; *publicity* is the dissemination of information about government to the public; *propaganda* is promotion organized to sway the public on behalf of a specific objective; *public reporting* is the process by which government officials give an accounting of their stewardship."

Presentation and Response

Mr. Harral did a fine job of presenting the MPR material, even as he found that he had to cut his lectures to fit the time requirements, though they were brief compared with the usual type of lecture. He referred occasionally to material at hand, used the slides to excellent advantage, and sought to draw out the officials for comment and discussion at the close of each period.

It is difficult to say anything but in praise of the Short Course, its presentation, and the response—not only because I consider it such a great venture but all the more because I had the pleasure of participating in the latter stages of preparation of the course and in the actual sessions themselves. I am, therefore, frankly prejudiced in favor of the whole works.

Thoughts for the Future

Nevertheless, the Short Course should be looked upon and reviewed herein with an objective and critical eye—because it is too important a step in the growth of MPR to be treated as "a nice thing" and let it go at that. Such a course must be given again and again and in many places—and each time it must be better than before. Bear in mind that this is the first time, I'm pretty sure, that such an MPR Short Course has been given. It was a trial balloon.

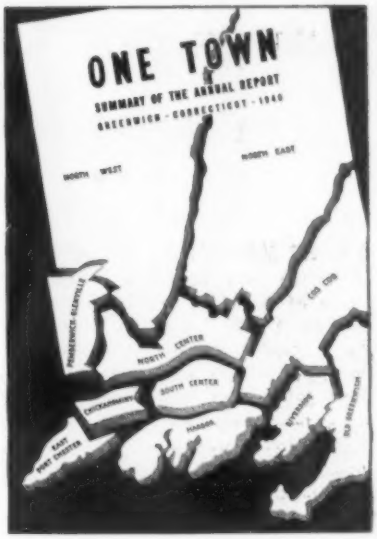
If the Short Course is to be given again in the time limit of about seven hours (or even if its time is to be lengthened to include the morning hours) it must be tailored more to fit. Every effort—and still some—must be made to cut out everything that can be spared in the lecture. Each lecture should be reduced to a limit of 10 or 15 minutes at the most.

Slides should change as frequently as possible during the lecture, as fast as the points made, and additional slides should be on hand to point up discussion. Slides might be produced in anticipation of queries and moot points and be ready to throw on the screen when these come up.

Reduction of lecture time to 10 or 15 minutes would leave the remainder of a 40-minute period for discussion and experience-meeting — where the real work of the course can be accomplished. It is in the recounting of practical experience, the shooting of questions against it, the furnishing of proof for it, and the bringing forth of principles to support or deny it—it is in this phase of the course where the gains can be made. The printed guide and the lecture are essential, but only as they serve as the signpost and the springboard for getting down to cases, still under the leadership of the lecturer and any possible assistant leaders.

This would not make experts in seven or ten hours, either. But it would stimulate the thought of each of those in the course to the point where they might begin applying MPR in improved ways or might even call an expert in now and then! At the least it would produce an invaluable and extensive exchange of MPR ideas.

Mr. Harral and the ISLG have done the spadework, the hard initial digging. It is to be hoped that their good foundation will be the basis for further building.



Your Annual Report

This year perhaps you are making a concerted effort to inject real zing into your annual municipal report so that it will become a living-room table piece instead of a dust collector on some back shelf or a few ounces more for the waste-paper collection. Send us your report when it's off the press and jot a few notes if you want to point out anything special about it.

Both Greenwich and Stratford in Fairfield County, Conn., are among towns becoming noted for their annual reports. The reports behind the respective covers shown above and below tell the municipal story interestingly. They're easy to read. Both made use of school art departments (an idea you might like to try).

The Greenwich report won the award for the "over 10,000" class in the third annual New England Municipal Report competition recently concluded.

Bargains Available in Administrative Assistants for City Managers

By GEORGE E. BEAN
City Manager
Pontiac, Mich.

MOST MANAGERS, particularly in cities over 10,000, are now well aware of the need for intelligent assistance if they are to give their city the leadership necessary for meeting the many urgent problems facing all cities today. The importance of managers' freeing themselves from administrative detail was perhaps the main theme of the speakers at the annual conference of the International City Managers Association last October.

Yet many managers are still failing to make use of the many qualified persons who receive degrees in government, public administration, or kindred fields each year. These people are willing to work hard at low salaries in order to get the right type of experience.

Obligation an Opportunity

Much has been said of the managers' obligation to train future administrators to take responsible jobs in the many cities that are adopting the city manager charter each year. While this obligation does exist, such an altruistic motive is unnecessary. Most managers should snap up at least one of these potential administrators because they are what might be called "administrative bargains." Most are open-minded and anxious to learn. If only for purely selfish reasons—to get a job done and enhance his own prestige—a manager should make use of them.

Two and one-half years ago, the writer was hired as manager of Pontiac, an industrial town of 73,000 people. A year later a city council was elected that gave a green light to the program outlined by the manager.

The city had no personnel system. It had no planning staff or master plan, in spite of a provision in the city charter that such a plan would be adopted not later than 1923. Relations with the municipal employes' union had reached a new low. No annual report had been published since 1928.

The position of administrative assistant to the city manager was set up in the 1946 budget, and the position was filled a few months later. The 1947 budget contained small appropriations for two new departments: personnel and planning.

The administrative assistant came with the understanding that he was taking the job to get the experience necessary to qualify him for a position as city manager. He had an M.A. degree in public administration and two years of experience in the Federal Government. He has become familiar with council policy and the manager's decisions on a wide range of subjects by sitting in at all important meetings, both in the council chambers and in the manager's office. Having done this, he is able to take care of the more common complaints, questions, and correspondence which frequently take such a large proportion of a manager's time. He publishes the annual report, tax leaflets, and other messages to the public, obtains information for the press, talks to public groups on request, assists in viewing the budget, and does many other things to relieve and assist the manager.

The city planning department was set up as soon as the 1947 budget was finally approved. Two young engineers were assigned to this department: one a young mechanical engineer interested in the city management profession but with no municipal experience; the other a civil engineer who discovered that he preferred planning to water-works engineering. The planning office is next to the manager's office and some discussion of present or future city problems occurs almost every day. Since the adoption of a master plan was urgent, the manager hired an experienced consultant on a one-day-a-month basis. During these monthly visits, the consultant gives the two members of the planning staff a briefing on what he wants and reviews what has been accomplished. In this way, the planning staff receives instruction from an experienced planner and is completely familiar with each phase of the work by the time it is completed. As a result, the preliminary master-plan report has already been approval by the city plan commission, and a final report is due in January.

The personnel director was hired in March. He was a public administration graduate with some personnel experience at the state level. He has been in close contact with the manager's office. A classification and pay plan (based on a 1945 survey, but brought up to date) has been adopted, a complete set of personnel rules and regulations is under discussion with the union, and relations with the union are unusually good—a complete reversal from a year ago. Examinations for fire-fighter and clerical positions have been given with the assistance of the state municipal league.

Over-all Policies

It is, of course, essential that a manager spend some time each week discussing the over-all policy of the city with these "trainees" to give them a certain perspective on the problems to be solved. This is sometimes difficult, especially when the trainee does not work in city hall.

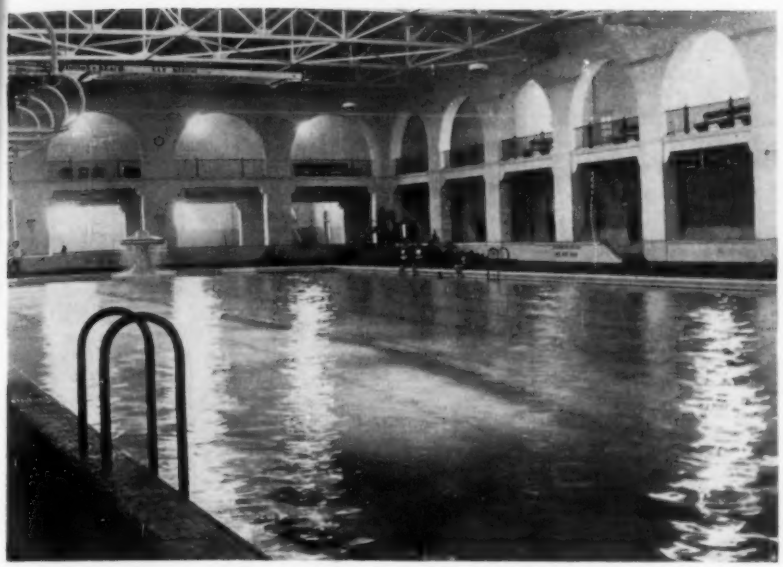
It has been my experience that well-qualified men with considerable experience in administrative techniques at the municipal level are virtually unavailable at the salaries paid by most cities. Faced with this situation, I am firmly convinced that managers should turn to young men with good scholastic standing who are motivated by a sincere interest in local government and have, through their studies, some familiarity with administrative techniques. The time spent in training such men returns ample dividends to the city manager who, relieved from time-consuming detail, is free to give a higher standard of service to the city.

Administrative Training in Pontiac

In complying with a request from THE AMERICAN CITY *for the article presented here, City Manager Bean writes:*

We feel that the program as outlined is working quite well in Pontiac. It was created not as a training program, but out of the city's dire need for some kind of professional help at the administrative level.

I would prefer to balance the organization by having some of the persons who are in the training program stay in the organization. However, in order to get them, I agreed that there would be no objection to their taking jobs in the manager field after a two-year period.



During the war, more than 250,000 Navy "boots" used this pool for training.

Swimming Pool Turns Civilian

By R. W. RINK
Assistant to the City Manager
San Diego, Calif.

SAN DIEGO'S big indoor swimming pool turned civilian last year. As is the case in a number of instances where a busy war record is involved, this called for a certain amount of readjustment from the military to the civilian form of life.

Back in January of 1943, the U. S. Navy commandeered San Diego's 175-foot indoor swimming pool. The Navy took it to teach the "boots" a very important type of swimming — how to abandon ship, how to swim fully dressed, and how to take off their trousers in the water, fill them with air, and make a life preserver.

After three and a half years, during which time 250,000 energetic American boys had propelled themselves through the pool, the Navy gave it back. It didn't look quite the same. The paint was shabby. After 20 years of transmitting golden, California sunshine, a 9,000-square-foot skylight got tired of watching the swimmers below and began to join them, a few panes at a time. It was no time to halt operations to replace the skylight so the Navy just put a roof where the glass had been.

Of course the Navy said it would pay for this wear and tear, and sent down one commander and two lieutenant commanders to negotiate with the city. Their conferences with city officials resulted in payment to the city of $35,975.

Modernizing Required

As the pool was 20 years old, it needed modernizing and general overhauling. The interior was out of date, the acoustical properties amplified, reverberated, and echoed human voices into an inarticulate babble, the steel trusses overhead were rusty. The water filters were worn out and the chlorinators were shot. One of the high-pressure boilers used for heating the water would have blown through the roof had it been fired up.

The first step was a decision not to spend $9,000 for replacing the skylight, but to apply the amount toward the installation of 22,000 square feet of acoustical tile. The Director of Recreation, under whose jurisdiction the operation of the pool reposes, said that if the decorative scheme could be given some oomph, all sorts of desirable attractions, from Billy Rose's Aquacade on down, could be staged for the enjoyment of the public. The architect in the Planning Commission office was asked to give suggestions. His advice was paint. "Put it on," said the architect, "to accentuate horizontal lines and offset the vertical influence injected by the numerous arches in the building. Also use light pastel colors."

The Assistant Director of Public Works and the writer took over from here and prepared plans and specifications for painting and acoustic treatment. Maintaining a water temperature of 80 degrees in the pool makes for high humidity and condensation on cooler surfaces. In addition, fire resistive qualities were required because the building would cater to large crowds. The tile selected was American Acoustics "Soft Tone" and the truss paint, Wilbur and Williams "Totrust." The wall paints were a one-coat interior flat wall finish. In place of the old, worn-out chlorinator there is a new Everson SterElator.

Inter-Municipal Cooperation

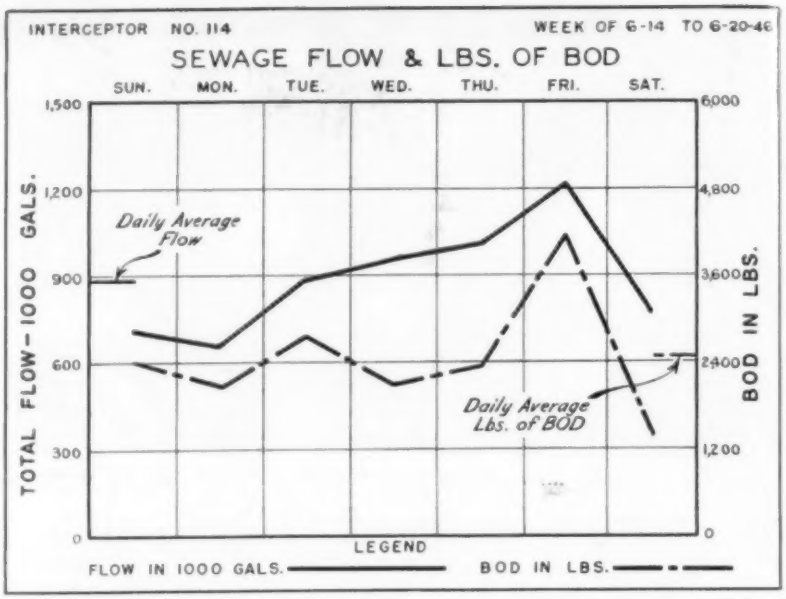
While the contractor's human flies were crawling around those dizzy heights applying off-white acoustic block and painting the steel trusses to match, the city's Public Works Department moved in with plumbers, electricians, welders, machinists, carpenters, and painters to put the boilers in shape, repair and recharge the filters, and install a public address system.

If an employe or an official had some special knowledge that would contribute to the success of the job, he was called upon. The Sanitary Engineer in the Water Department and the Assistant City Manager (not the Assistant to the City Manager—he's another guy) knew a lot about filters. They were asked to crawl inside, after the sand and rock had been removed, to determine the condition of the steel shells. Not wanting to soil his good suit, the Assistant City Manager stripped down to his shorts and wriggled through the 14-inch openings. At home that evening when he undressed, his wife noticed that he was smudged in a few places. She asked what phase of his administrative duties necessitated soiling portions of his anatomy that were normally covered by a business suit!

Nearly every department in the city, plus a general contractor and his forces, worked on the project simultaneously. Several department heads with equal authority were directing operations, but the City Manager didn't have to settle any jurisdictional disputes. Cooperation reigned supreme. Now San Diego's youngsters swim to the melodious rhythms of Strauss waltzes in crystal waters that reflect palms and banana trees planted around one of the finest indoor pools in the United States.

Indianapolis Makes A Sewerage Analysis

By ROBERT L. MEEK
Moore and Owen
Consulting Engineers
Indianapolis, Ind.



PREPARING a city's sewerage plans for the next 10 years always requires detailed analysis. The study made by the writer's firm of the Indianapolis problems and how to meet them was, therefore, a real challenge. The fact that the city has acted promptly on the report recommendations encourages us to feel that the study will yield practical benefits to the people of Indianapolis.

We have been gratified to see a civic committee formed, composed of City Engineer Tom Jacobi, the Indianapolis Chamber of Commerce, and our firm, that is designed to implement the recommendations.

Indianapolis, in its early stages, had a well-planned sewer system, but through the years this system has been extended and overloaded beyond the limits used by the original design. This led to the flooding of streets and basements during storms and to continuous pollution of the receiving streams. A search for a remedy prompted the late Mayor Robert H. Tyndall and the Indianapolis Common Council to order the engineering report, which embodies a master over-all plan in the light of today's needs.

Storm-Water Problems

The storm-water problem seemed to be the greatest and most complicated. Our first step was to examine existing storm sewers and obtain a measure of their effectiveness. We made sewer maps showing the recorded location, size, and slopes. Second, field parties checked the sizes and slopes and measured the depth and velocity to obtain the capacities of the sewers. Third, inspectors physically checked the sewers' structural condition. Fourth, we obtained rainfall data from the U. S. Weather Bureau, and finally we studied carefully the surface conditions disclosed from aerial photographs.

The sewer maps, compiled at a scale of 700 feet to the inch, showed the locations, size, and direction of flow of all sewers on record. This information was later supplemented by the knowledge of the personnel in the city engineer's office, and by the field investigations of our own crew.

Flows in the sewers depend, of course, not only on sewer size but on velocity. In order to get this latter factor accurately, our field crews made a velocity check of all sewers over 24 inches in diameter. This produced some problems. We first tried measuring by adding a dye to the sewage and timing the flow speed, using the relatively easy-to-see uranine dye. However, dilution made even this sharply colored stain difficult to time. For an alternate, we tried ping pong balls. Although we used three of these balls together, often all three of them would catch in some eddy or pile of debris and thus required a recheck. To overcome these uncertainties, we tried an electrical method. This employed the use of two copper plates held about one inch apart by a piece of rubber covered wood. These contacts were wired in a series with a 500 milliammeter, a variable resistance, and a variable number of dry cells ranging from three to nine batteries. This device indicated the point of greatest concentration of a salt solution passing the observer by the greatest rise in the needle of the milliammeter. Calcium chloride gave better results than common table salt, since it dissolved more rapidly in water to form the concentrated solution desired. Our investigators introduced the salt solution into the upper manhole and recorded by stop-watch the time when the milliammeter, located at a lower manhole, reached its highest reading. They then could calculate velocity easily from the measured distance between manholes and the time of flow.

While collecting these velocity data, the field crews obtained the depth of flow at the measured velocity and checked the sewer pipe size. Following along with the crews collecting velocity data was a level party measuring the actual slope of the sewers at every accessible manhole.

Inspection of Sewers

Following these flow studies, our crews made a physical inspection of all sewers over 24 inches in diameter in order to determine their structural stability. Those sewers, too small to walk through, about 42-inch diameter and under, were inspected from the manholes at each end of the run of pipe with the aid of a portable spot light. Where the flow of the sewage was either too swift or too deep, or both, for walking, the inspectors used a deflated rubber boat lowered through the manhole and inflated in the sewer.

The next step was to calculate the rainfall runoff and thus locate the

points where the present system would be inadequate. This rainfall runoff calculation was made by the rational method and produced a series of time-intensity curves for the desired frequencies of storm recurrence.

The city was carefully divided into zones based on property value and the economic loss which might be suffered in event of the flooding of property. Frequencies of storm recurrence of from 25 years for the heart of the city to five years for the rural areas were assigned to these zones in accordance with the protection justified by possible flood losses.

Relief Sewers

We then calculated rainfall runoff arrived at by this method for the entire city and compared it with the present sewer capacities. The points where these capacities were inadequate soon disclosed themselves and guided the selection of relief sewers.

We also examined the outfalls of these sewers for possible backflow during periods of high water. Basing the study on the devastating flood of 1913, we recommended the use of flood-gates to provide protection in the flood areas.

Sanitary Waste Problem

During the study of the storm problem another group of engineers began the investigation of sanitary wastes. Because the key to interceptor sewer design is the diversion factors, this phase of the study began with a determination of these factors.

Diversion Factors

The first step was a physical inspection of all the 123 diversions in the existing sewer system which were accessible. We found that 20 did not function properly. Of these, 9 did not function at all, 7 were either inaccessible or had flows too small to measure, and 4 were partly or totally inoperative and permitted sanitary sewage to discharge into the streams.

Of course each of these 123 points should properly have its own diversion factor, so we took, to determine them, 5,254 samples of sewage and river water and analyzed them. As the samples were taken, we also made velocity and depth determinations to obtain the quantity of flow. Tie-in tests at strategic points during the test weeks made it possible to correlate all work to a one-week period. From these data, we calculated the pounds of BOD delivered at each diversion point.

Condition of Receiving Stream

As is well known, the final analysis of sewage treatment is the relation of the effluent to the receiving stream. We examined stream tests and data with this in mind. A study of the portion of the stream's drainage area affected by storms in the Indianapolis storm area established the percentage of a given rainfall which would reach these streams by means other than the sewers. This "percentage" via sewers, together with the stream's average low flow, gave a relation between the sewered and unsewered flow for computing the general stream diversion factor.

The remaining item needed for the computation was the parts per million of BOD allowable in the stream. Our studies indicated that the stream's dissolved oxygen content should remain above 50% of saturation. This provided a maximum allowable BOD in the stream of 15 ppm. Determination of all diversion factors therefore was based on that amount.

From these data on the organic load of the sewage and the purifying power of the stream an actual required diversion factor for each sewer overflow was determined.

Present Interceptor Capacities and Required Relief

The present interceptor sewers were analyzed on the basis of the calculated maximum flows from the diversion points produced by the recommended diversion factors. An amount of extra capacity was allowed for the growth of the city and changing conditions in the present populated areas. This analysis indicated the points where the present interceptor system is inadequate for present and future flows. These points were connected by a series of recommended relief interceptor sewers and

Top: This badly deteriorated sewer outfall is one reason for a study of Indianapolis sewer rehabilitation. Bottom: Root growths plug a sewer main.

shown on a map included in the report.

An investigation of the history of garbage collection, amounts collected, garbage disposal methods, and a field check of collection methods and amounts supplied the data for the study of garbage disposal. Three major facts were brought out by this portion of the report:

1. That large quantities of garbage were disposed of by private means.
2. That the present Garbage Reduction Plant, recently rebuilt, is adequate and economical for the disposal of garbage collected.
3. That other methods of garbage disposal should be considered only when additional major maintenance of the reduction plant is necessary, which, according to past experience, may be expected in about eight years.

Industrial Wastes

The industrial wastes came under investigation to determine what, if any, adverse effects these wastes might produce on sewer structures and treatment processes. Letters to the various industries resulted in an unusually high percentage of replies on the type of wastes being discharged to the sewers. Check samples showed these to be substantially accurate. Inspection of the sewers had already produced the location of structural failures, only one of which was traceable to industrial waste. The present industrial wastes on the whole proved to be sufficiently diluted or pretreated by the industries to render them harmless to the sewers and treatment process.

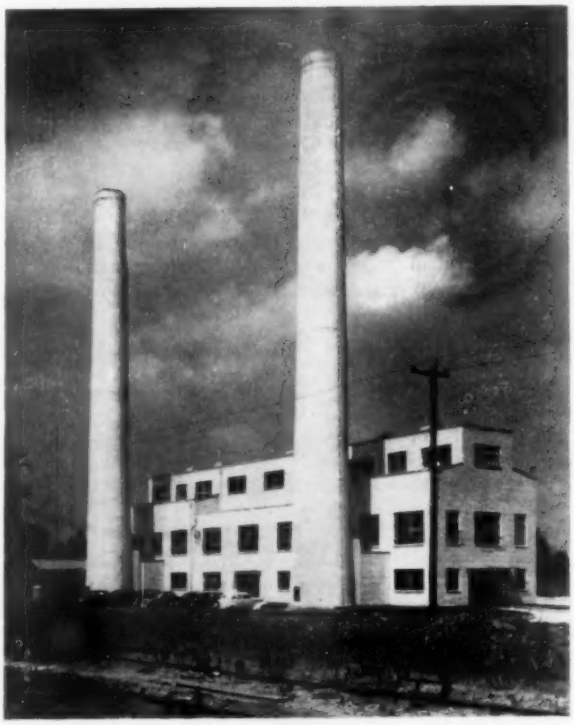
Wasted Cooling Water

Air conditioning in commercial establishments has reached large proportions in Indianapolis. The majority of these processes use well water. Since this clear water is wasted to the sewers continuously in hot weather, it joins the sanitary flow to the treatment plant. It was found that this flow is large when compared to the sanitary flow, but insignificant when compared to the storm flow. Its effect on the carrying capacity of the sewers was considered negligible.

Infiltration

Infiltration is a problem in all sewers. By comparing water pumpage with sewage flow and the strength of the nighttime sewage flow against 24-hour sewage strength, we estimated that the total infiltration amounted to about 15 mgd against a total sewage flow of about 79 mgd. This amount does not appear to be sufficiently excessive to warrant a costly general correction program. The inspection of the sewers produced the location of those particular sewers where heavy infiltration might warrant corrective measures.

Houston, Texas, Builds Dual Incinerator



The new incinerator at Houston. Dual construction makes breakdowns unlikely.

INCINERATION capacity is in the process of being raised at Houston, Texas, with the installation of a new two-unit incinerator with three cells each. The new incinerator is the first high-temperature unit for the city.

Although built as a single unit, the new incinerator will, in essence, be two separate and independent burners that are self-contained and can operate when other portions are down for repairs. The only points in common will be the receiving pits and the overhead crane.

The incinerator has three receiving pits, each with 7,000-cubic-foot capacity. A P&H 1½-cubic-yard traveling crane will take the refuse from these pits and bring it to either of the two incinerator units. Each furnace has its own preheater and forced-draft fan. Each is also served by a 140-foot stack. An ash hopper at the bottom of each furnace removes the residue. Ash gates and charging gates are opened by air rams. Forced-draft fans with 12,500-cfm capacity serve each furnace.

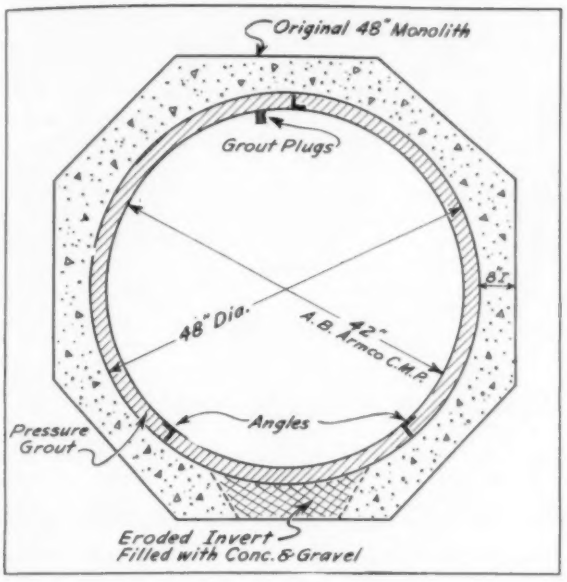
The incinerator will be equipped with gages to record the temperature of the preheater, the furnace, the combustion chamber, and the stack. The stack will consist of a radial brick chimney with a separate firebrick lining.

All refuse to be burned will be received and weighed before going to the incinerator cells. The weighing equipment will be of the recording type.

Precautions Against Breakdowns

Since the overhead crane will be the only piece of equipment whose failure can shut down the entire plant, every possible precaution is being taken to insure its continuity of operation. Spare motors, spare circuit breakers, spare solenoids, spare parts for the motor controllers—all are being supplied and kept in reserve to guard against this eventuality.

The plant is being designed by Lockwood and Andrews, Houston consulting engineers. Participating in the consulting work is Howard E. Burns, consulting engineer, Dallas, Texas. F. N. Baldwin, director of the Utilities Department, represents the city of Houston.



Working drawing showing how the new pipe was inserted into the old one.

A Sewer Retread Job

RELINING an ailing outfall sewer saved an expensive reconstruction job for the North Shore Sanitary District, Waukegan, Ill. The District faced the problem of repairing a failed storm sewer that serves as a by-pass at its North Chicago sewage treatment plant. The sewer, built about 1929, carries storm water and wastes from nearby North Chicago industries.

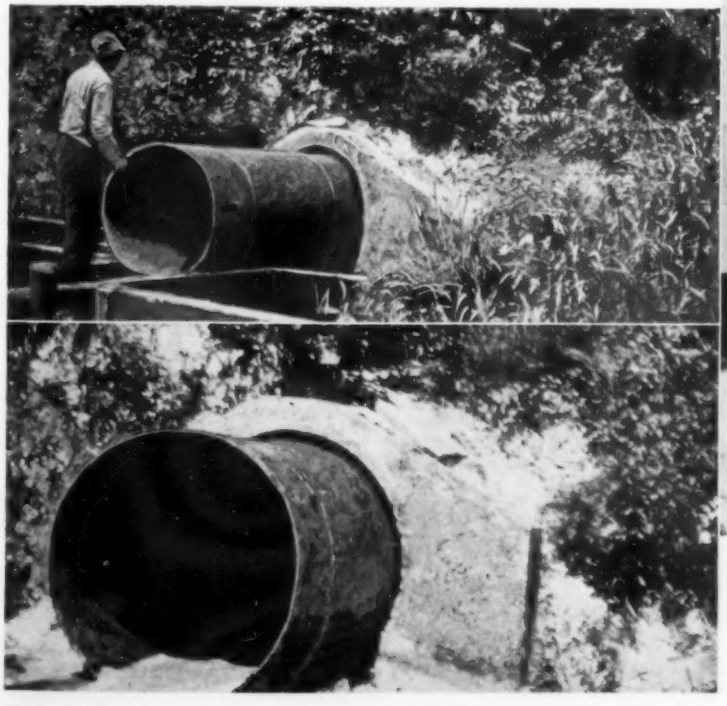
This particular section was approximately 300 feet long and built of monolithic concrete to a 48-inch diameter. The concrete thickness varied from 8 to 12 inches. The structure served adequately for many years, but in 1941 and 1942 it began to disintegrate. District engineers felt that possibly a change in the character of the trade wastes may have caused the disintegration.

By 1945, the invert of the monolith was completely destroyed for a width of about 15 inches. The sewage flowed under the structure in some places, presenting the possibility of aggravated damage because of undermining. The high velocity of the sewage, flowing at the rate of 15 feet per second, threatened to undermine the whole structure.

Since the fill over the original monolith ranged from 15 feet to as much as 22 feet, it appeared impractical to replace the conduit by the open-cut method. The District decided to reline the old structure by threading a smaller pipe in the original 48-inch line. After some study, its engineers selected a 42-inch Armco asbestos-bonded ingot iron pipe, bituminous-coated and having a paved invert. The pipe was fitted with internal expanding coupling bands to provide water tight joints.

To put the pipe securely in place, the engineers specified that grout be placed in the annular space between the outside of the pipe liner and the inside of the concrete sewer. Threaded plugs were welded on the top of the pipe at regular intervals to receive the grout, and angles were welded to the pipe at the third points to provide runners from sliding the pipe and to keep it centered in the old structure.

In order to make the installation, it



Upper left: The pipe is being pulled into the damaged sewer.

Left: Here it is, finished and operating.

Above: Corrugated iron manholes were placed over bends in the sewer line.

was necessary to cut off the flow of sewage. This was done simply by diverting the flow through the main-treatment plant. After the old sewer had been aired to permit working inside, the disintegrated invert was filled with stone and grout for a strong foundation.

The next step was to supply a manhole at each bend in the outfall sewer. The District built these manholes out of asbestos-bonded corrugated iron pipe similar to the pipe that was to be threaded into the old sewer. This made it possible to install a winch cable in the line to pull the corrugated sections into place. Scaffolding located at the outlet end aided in threading the pipe. The manholes were from 16 to 22 feet deep and were prefabricated before asphalt-coated cast iron steps were installed, and these also were coated after fabrication.

The structure has been in service for the past two years and has handled the corrosive trade wastes with their strong eroding characteristics without difficulty. The project was built by John Darrow, contractor, of Waukegan, Illinois.

The James Anderson Company of Lake Forest, Ill., served as the designing engineers for the North Shore Sanitary District.

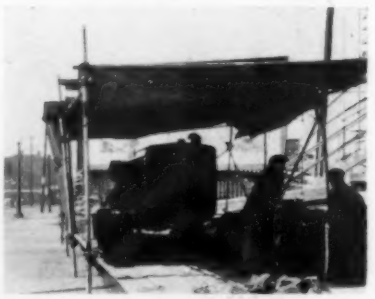
Cincinnati's Gunite Repair Program

Old concrete structures get new life through an orderly system of maintenance under the Department of Public Works

First step in Cincinnati's gunite repair work is sounding out and chipping off deteriorated concrete.

The crew next pumps the gunite mixture to the point of application through this mixing machine.

The mortar then is driven under pressure into place. The wall takes on the appearance of a new structure.



The big Gardner-Denver diesel air compressor that powers both the pneumatic hammer and the gunite machine.

TO KEEP concrete in first-class shape, Cincinnati has an active program of gunite repair going on continually. Most of the work is concentrated on beams and columns of bridges and other structures, but often retaining walls are reconditioned and occasionally even a bridge deck is gunited into place.

The work consists of first sounding out and chipping out unsound concrete by a pneumatic hammer. This is followed by the installation of mesh reinforcing where required, and then finally by the shooting of mortar onto the section to be repaired by a pneumatic applicator. A Gardner-Denver air compressor powered by a Caterpillar Tractor diesel engine provides the power for the work.

This phase of public works maintenance comes under the direct supervision of C. E. Brokaw, superintendent of highway maintenance division, and under the general direction of R. G. Sarvis, Director of Public Works.

Amateur Administration Was Expensive

Lessons learned by Cambridge in six successful years of council-manager government

By GEORGE A. McLAUGHLIN
President, Cambridge Civic Association
Cambridge, Mass.

IN NEW ENGLAND, we have learned the hard way that government by amateurs is not good enough. Amateurs have held, within the confines of their abilities, our lives and safety. We have had government without continuity.

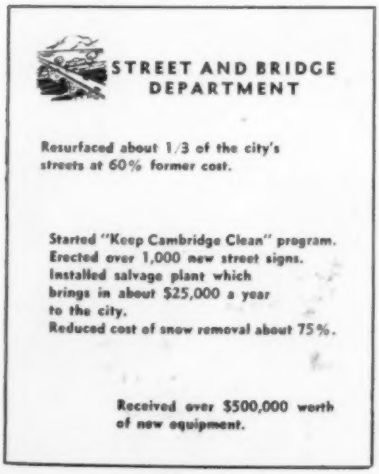
We have learned through the lesson of bad streets, poor city-employe relations, obsolete equipment, high tax rates, high assessments, and mounting city debt that public administration by amateurs is bad business.

In part, Cambridge has participated in the teaching of that lesson. In a few short years we have progressed from being the worst-governed city in Massachusetts to the best. The cause for the improvement was council-manager government, known here as "Plan E," with proportional-representation elections.

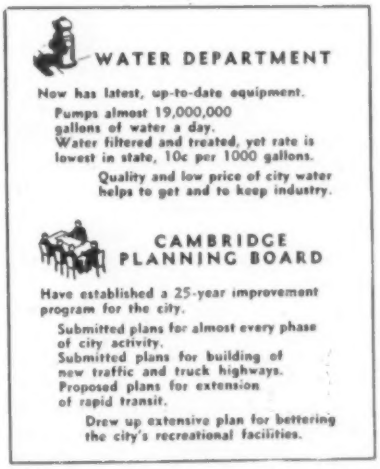
In six years our debt has been cut from $12,000,000 to less than $3,000,000. Our tax rate has gone progressively downward from $46.30 to $35.50. Our city equipment has been modernized. We do all of our own work, building our own streets, and maintaining our own buildings and property. We own every bit of equipment we use, from power drills to snowplows. At the same time, the pay of the average city employer has increased 40%, with a 10% decrease in working hours. Pay and working conditions are the best in New England. Cambridge has an impressive record in providing veterans' housing, having erected 304 temporary veterans' housing units and aided in producing 1,200 others. It is now spending $1,500,000 to build permanent garden-type units for veterans. All veterans' services have been consolidated in one building. A huge 25-year plan is under way to improve all recreational facilities. Parking meters have paid for themselves, improved Cambridge business, and will yield an ultimate income of more than $150,000 yearly. And so it goes—the story of achievement that comes in with council-manager government.

Council-manager government is a simple recognition that public service is business. It adapts the ordinary structure of a business corporation as we know it to city government. In a corporation, the board of directors formulates corporate policy, and a president executes that policy. In a city, the city council is the board of directors, and the city manager is the president.

When you pick a president for a corporation, you seek a man trained in your particular field. In the field of public administration there is no shortage of trained men. There is no excuse for government by trial and error when there exists a corps of men who from the experience of the past know the solution of many of the problems common to cities. They know the value of city planning, not only of municipal development, but also of municipal finance.


STREET AND BRIDGE DEPARTMENT
Resurfaced about 1/3 of the city's streets at 60% former cost.
Started "Keep Cambridge Clean" program.
Erected over 1,000 new street signs.
Installed salvage plant which brings in about $25,000 a year to the city.
Reduced cost of snow removal about 75%.
Received over $500,000 worth of new equipment.

POLICE DEPARTMENT
Equipped with 14 new cars, 4 motorcycles, 2 ambulances.
Complete new telephone and F.M. signal systems installed.
Local Police Academy established.
Installed parking meters.
Officers sent to F.B.I. school.


WATER DEPARTMENT
Now has latest, up-to-date equipment.
Pumps almost 19,000,000 gallons of water a day.
Water filtered and treated, yet rate is lowest in state, 10c per 1000 gallons.
Quality and low price of city water helps to get and to keep industry.
CAMBRIDGE PLANNING BOARD
Have established a 25-year improvement program for the city.
Submitted plans for almost every phase of city activity.
Submitted plans for building of new traffic and truck highways.
Proposed plans for extension of rapid transit.
Drew up extensive plan for bettering the city's recreational facilities.

Illustrations from booklet "Cambridge —A Great Place to Come Home To."

An alert, efficiently administered city with a reducing tax rate gets many material rewards. The great industries of the Commonwealth of Massachusetts and New England like Cambridge. They are assured that here is government at cost. They know that the city manager, John B. Atkinson, conceives it to be his duty to aid and foster Cambridge industry. They know that here is a future that can be calculated, and the result is that they come to Cambridge to build. Of all the cities of Greater Boston, Cambridge shows the greatest industrial activity. Millions of dollars are being spent for new industrial construction, and many other plants are on the drawing board. More industry means lower taxes and more jobs for Cambridge people. The outlook for this council-manager governed city is brilliant with hope for future gains.

From a speech delivered at the 23rd New England Conference.

Lynwood Community Center

A COMMUNITY center to cost $102,000 when completed is to be erected in Lynwood, Calif. H. A. Storey, city manager, writes that questionnaires sent out to the public indicated a community center was the first city project in order of public preference. An added charge to each water bill has been used to accumulate funds for the building.

Tulsa's Street Program

By DAN W. PATTON
City Engineer
Tulsa, Okla.

A LONG-RANGE street-improvement program is beginning to pay dividends to Tulsa on a wholesale scale by guiding the construction of new improvements that are now making the city's street system able to meet present-day traffic loads.

Several years ago Tulsa adopted an arterial-street improvement plan, and since then has made considerable progress in bringing it to completion in actual physical form. These improvements consist largely of repaving and widening streets. Much of the cost was charged against benefited property through the creation of assessment districts. Because of Tulsa's rapid growth, its increased traffic, and demands for further improvements in the major system, we felt it unfair to carry out further widening and repaving through the assessment plan. Consequently, we were instrumental in obtaining the passage of a legislative act permitting cities of more than 5,000 to issue general-improvement bonds for improving arterial streets.

With this authority obtained, in November 1945, Tulsa voted a $7,000,000 bond issue, $3,000,000 of which was for water improvements, $1,000,000 for various city needs, and $3,000,000 for street improvements. The entire issue sold for the very favorable, for the city at least, rate of 1.2%, these bonds to be retired at the expense of the general public.

Includes Widening and Resurfacing

Our proposal to the voters was to widen existing pavements now less than 30 feet between the curbs, repave deteriorated paving, and resurface where necessary. The added width was variable, depending on traffic needs and the extent to which the money raised through bonds could be extended.

Some of the projects consist of concrete widening of existing asphalt pavements and installing a new wearing surface over the old. Others require complete removal of old wearing surfaces,

▲ **For 27 years, Peoria Ave. carried traffic on a concrete slab 18 feet wide. Last year it was widened to 40 feet with 7-inch concrete and resurfaced with asphalt.**

▶ **This was an oiled 20-foot roadway. Now it carries two 22-foot traffic lanes separated by a 16-foot divider.**

▶ **Integral curb and gutter was all that was required to widen this street from 18 to 40 feet.**

A three-year improvement program capitalizes on a low interest rate to meet present traffic requirements

to be replaced by new. Some few miles are along narrow concrete roads laid 25 years or more ago by the county. They are now in the city limits, and the old paving is topped with either sheet asphalt on a binder course or both with asphaltic concrete 2 to 2½ inches deep. The program also involves the acquisition of property for additional right-of-way corner and intersection revisions, and the resurfacing in centralized downtown Tulsa of principal streets which are not classed as arterial streets.

In the over-all program it is planned to pave, widen, resurface, and otherwise improve a total of 28 projects, which will involve the laying of approximately 300,000 square yards of Class F-7-inch concrete; the resurfacing of approximately 300,000 square yards of sheet asphalt and asphaltic concrete; approximately 50,000 square yards of asphaltic seal coating; repairs to the concrete base under such asphalt pavements; curb, grading, guttering, storm drainage, and readjustment of drainage structures.

The concrete mix for Class F paving is specified as 1:2:3¼ (approximate). It allows special curing compounds of the seal-coat type, the water cure, or the calcium chloride. Any of the three is allowable when approved in writing by the city engineer. Under these specifications, concrete must develop a compressive strength at the age of 7 days of not less than 1,600 pounds per square inch; at an age of 28 days, not less than 2,000 pounds per square inch. Sheet asphalt specifications comply with the general requirements of the Asphalt Institute; likewise, asphaltic concrete specifications are in keeping with the Institute's current specifications. Portland-cement concrete paving, as to plan, conforms to current plans and recommendations of the Portland Cement Association. In the general sense, we are laying no reinforced concrete pavements; the amount of steel used conforms to standard practice for load transfer at joints, contraction-joint dowels, tie bars along longitudinal joints such as used in standard concrete paving construction.

The city has been extremely fortunate in the construction progress, about one-third of concrete paving is complete and one-fifth of the proposed asphalt resurfacing. All materials, even reinforcing steel, is produced within short-line hauls, and locally, and thus far local contractors have been available to carry out the contracts as fast as the personnel in the engineering department could prepare projects for a letting.

The work is not being hurried for the reason that a three-year program was in mind, and also for the further reason that all fields of employment in our urban areas are well filled. Building permits in dollar value for this year to date well exceed any year since 1929, the largest in the history of Tulsa.

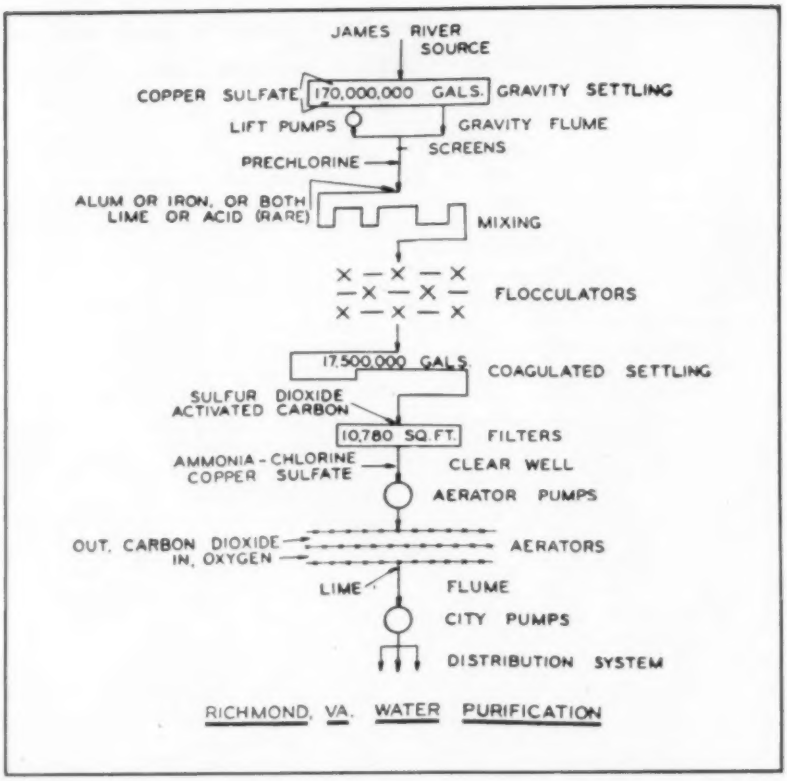
The City of Tulsa is growing rapidly. The urban area is expanding in leaps and bounds. Because of this, a storm and sanitary sewer extension program, the two involving an expenditure of approximately $2,000,000, will be submitted to the voters, probably in January 1948; at the same time, the voters will be submitted the question of whether or not there shall be issued $15,750,000 for enlarging the water supply. Tulsa obtains her water supply from Lake Spavinaw, an impounding reservoir some sixty miles east of Tulsa, fed by Spavinaw Creek. The annual daily runoff averages 220,000,000 gallons. From Lake Spavinaw, the water flows by gravity through a 60-inch to 54-inch conduit to receiving reservoirs to a point near the northeast city limits. This pipeline delivers 25,000,000 gallons daily. The proposal is to build a dam 80 feet in height three miles above the present (55-foot-high) dam for storage; to lay a 72-inch to 66-inch conduit paralleling the present flow line and capable of delivering an additional 42,000,000 gallons per day to the east gate of the city. The vote on this program, as stated, will be cast some time during January 1948. This program has been endorsed by a 150-man committee named by the Mayor after consulting engineers, following an exhaustive study, recommended the program.

Spavinaw Creek, in the Ozark foothills, is unsurpassed in quality and its full development would supply a city of 500,000.

▶ **This street, 27 years old, 30 feet wide, required resurfacing with an asphalt binder and topping with sheet asphalt.**

How Good Is the Delivered Water?

Richmond, Va., makes sure that the water coming out of the tap is of as high quality as that starting from the plant.



The diagram shows how the Richmond plant treats water flowing through it.

IT IS one thing to start water from a treatment plant and have it in excellent quality, says Marsden Smith, chief engineer of the Department of Public Utilities, Richmond, Va., but it is another to deliver this same water to the customer and keep its quality high. Mr. Smith made this point at the annual meeting of the Pennsylvania Water Works Operators' Association held recently at State College, Pa.

Some treatments, he pointed out, are reserved for the improvement of the water in its transition from a raw to a treated stage. Some are reserved solely for the maintenance of the water in good condition as it proceeds through the distribution system. The purpose of the latter treatments is to eliminate depreciation of water quality because of any chemical reaction or the production of living organisms within it.

The Richmond plant removes the living organisms, first by superchlorination that actively oxidizes this material, and then by "super coagulation" in which adequate settling plays a dominant part. The plant uses both alum and iron salts for a coagulant, feeding a higher proportion of alum in summer, and switching to an increase of the iron salts in winter. The filters are relatively unimportant in the Richmond plant, doing little more than screening out the cinders that land in the settling basin from the nearby railroad yard and removing the activated carbon applied as a taste-and-odor control measure.

Since the water is relatively free of ammonia, it has no recognizable "breakpoint." Consequently, Mr. Smith dechlorinates the water before sending it through the filter beds. By dechlorinating, reducing the residual to 0.2 ppm through the use of sulphur dioxide, he is able to prevent a chlorinous taste. The filters remain exceptionally clean; "cleaner," he said, "than Cape May sand." The standard filter rate is 3 gallons per square foot per minute, in contrast to the conventional rate of 2 gallons per square foot, with no impairment of efficiency.

Algae Prevention

This, however, takes care of the water as it leaves the plant. And as long as an 0.2-ppm residual can be maintained in the distribution system, there is no depreciation in water quality. The possibility exists, however, that algae will build up in the open clear-water reservoir and cause trouble. To prevent the algae's forming, he adds a small amount of copper sulphate, applying it after filtration and before aeration. He limits the dosage to 0.25 ppm, expressed as copper. The largest residual in the distribution system is roughly 0.2 ppm. The copper sulphate is added at the point of post-chlorination and post-ammoniation.

As an alternative algaecidal measure, Mr. Smith pointed out the possibility of covering the clear-water reservoir. Because of its size, this would be difficult. In any case, even if the reservoir were covered, he states that he would retain the copper sulphate treatment in view of its beneficial effect on the water in the distribution pipes.

The control of algae is not the only means of insuring good water delivery in Richmond. The careful construction of the mains themselves has played an important part. Mr. Smith refuses to recognize any rule-of-thumb dictum that a main cannot be too large. He pointed out that, in effect, these oversize mains can be little more than small underground storage reservoirs where the water can become stale because of the slow movement through them. His policy is to use mains no smaller than 6 inches and service headers no larger than 3 inches.

As far as the mains themselves are concerned, the Richmond experience indicates that the mechanical-joint water pipe is no more expensive than the conventional bell-and-spigot and has the advantage of being speedier to install and more flexible. The mains customarily have a cement lining with a bituminous exterior lining.

However, as Mr. Smith states, just as the proof of the pudding is in the eating, the proof of the water is in the drinking, and the Richmond system has not had a taste and odor complaint since 1945.

Buffalo Planning Association Sponsors Textbook on City

A NEWLY published textbook, *Buffalo, Your City*, sponsored by the Buffalo City Planning Association soon will be included in the curriculum for the elementary grades of every public and parochial school in the city. The book is an outgrowth of the annual Civic Planning Week * sponsored each year by the Association in the seventh and eighth grades and the public and parochial high schools. It will meet a need of teachers for an integrated collection of material required for an adequate study of the city.

According to Milton C. Guggenheimer, president of the Planning Association, "A city must have the help and cooperation of its youth in order to plan wisely for its future, for from youth's fearlessness and courage great ideals develop." The textbook is expected to be a substantial help in making future citizens planning-conscious.

Receiving high praise from Buffalo civic and educational leaders, the amply illustrated book traces the growth of Buffalo through the years, from a tiny French settlement of 1758 to its present status as an important metropolitan city. Separate chapters describe Buffalo's commerce, her schools and cultural institutions, her recreational and welfare activities, her public utilities and services. The governments of Buffalo, Erie County, and New York State are explained in simple terms. There is a chapter on political parties.

The larger aspect of planning is discussed in the chapter "Buffalo of Tomorrow," in which the reader is reminded that "the most important thing about any city is the people who live in it" and that the future of a city like Buffalo rests on the knowledge, imagination, self-control, and courage of every citizen.

Study guides and helps for students are included in each chapter. Authors of the 255-page volume are Alice Ennis Glazier, former advertising executive and member of the Association's board of directors, and Edwin F. Rundell, instructor of social studies at South Park High School in Buffalo. The book, bound in royal blue with silver lettering, is illustrated with pen and ink sketches by Victor Aures, a Buffalo artist, and with photographs by Fitzgerald Airphoto.

* See THE AMERICAN CITY for March 1947, "Buffalo Prepares for Third Annual Civic Planning Week," p. 91.

Someone in YOUR neighborhood has to take the initiative in organizing your Neighborhood Planning Council
why not you?
The Buffalo City Planning Association which has already held preliminary meetings of representatives from all the postal zones in the City, will put all its facilities - Literature, speakers, publicity at your disposal
OVERCROWDING OF SCHOOLS
INADEQUATE OR UNSATISFACTORY SHOPPING
INSUFFICIENT PLAYGROUNDS
TRAFFIC AND SAFETY
GOOD AND BAD HOUSING
NOISES
NEIGHBORHOOD PLANNING COUNCIL

These two photographs show one and a part of one of the large panels displayed at the recent Better Homes Exposition in Buffalo, which highlighted the educative work being done by the Buffalo City Planning Association in developing a civic consciousness of the need of planning among the youth and adults of the city.

Elroy Expands Municipal Diesel Plant

ELROY, Wis., a community of 2,000, celebrated 16 years of municipal diesel electric plant operation by acquiring its fourth engine, a 6-cylinder, 450-hp Fairbanks-Morse. In 1931, with two diesels, it generated 508,150 kwh and in 1945, it turned out 1,446,000 kwh. Then in 1946, production went over 1,700,000 kwh.

Output in 1945 averaged 11.7 kwh to a gallon of fuel oil as against 9.04 in 1931. Average kwh revenue in 1945, based on total generation, was 2.67 cents, while average delivered cost per kwh on the same basis, was 1.51 cents.

An addition to the power house to accommodate the new engine was completed late in 1945 at a cost of about $18,000; this amount was paid immediately from surplus accumulated from plant earnings. The cost of the new diesel alternatior and accessories will be paid by installments from earnings without any contribution of tax money. Cost of the first two engines and auxiliaries was paid for in this manner in six years, with the final payment made in July 1936, and of the third engine and its auxiliaries also in six years, with final payment in 1943.

Elroy had its first electric service from a municipal steam plant beginning about 1899. It had operated a municipal water system for ten years before that—windmill and well—and has continued to operate it ever since. so that the city claims to have the oldest continuously owned and operated municipal utility in Wisconsin.

Its electric system went into operation in 1930, with the use of a 2-cylinder, 120-hp and a 4-cylinder, 240-hp engine. Eight years later a third engine was added, a 4-cylinder, 300-hp unit. All engines and auxiliary equipment were supplied by Fairbanks, Morse & Company.

The three units have a combined horsepower of 660 and a total rated kw capacity of 427—72, 155, and 200. Peak load of 1945 was 360 kw. The fourth diesel will raise the total horsepower to 1,110 and the capacity to 727 kw, giving about 100% reserve.

Use of power by industries accounted for more than one-third (425,816 kwh) of the energy sold in 1945. It went mainly to a milk-powder plant, a creamery, an electric sawmill, two feed mills. and a railroad roundhouse. Residential use totaled 292,841 and commercial ("general lighting and combination rate"), 261,468.

Engines have been taken down once a year for general overhaul. Replacements have been minor.

The monthly residential schedule starts with a service charge of 60 cents net, and follows with 5 cents net for the first 50 kwh, 3 cents for the next 100. and 2 cents for excess.

Commercial service is assessed monthly; a service charge of 75 cents net, 5 cents net for the first 100 kwh, 3 cents for the next 200, net, and 2 cents for excess.

For small power there is no service charge. The first charge is 5 cents, net, for 100 kwh, 3 cents for the next 400, and 2 cents for excess.

It will be noted that Elroy simplifies its rate schedule by using the same top, intermediate, and excess charges for these three major schedules—5, 3, and 2 cents—the variations being in the consumption volumes required at the different levels.

Special rates are made for large power users. The largest user pays at the rate of 4 cents, net, for the first 600 kwh, 3 cents for the next 2,400, 2 cents for the next 12,000, and 1.5 cents for excess.

Bills are made out at net rates, subject to a 10% penalty for delayed payment.

An average residential monthly consumption of 65 kwh would thus be billed for $3.55 net. Many users pay less than 5 cents a kwh for their total consumption.

A light, power, and water committee of the city council directs the electric plant and the water department. Appointed members are William Garbin. James Bennett, and Henry Wick. O. W. Neuman, Mayor since 1935, is an ex-officio member. George Brown is superintendent of the light and water departments. Merton Dodsworth has been electric plant superintendent throughout the diesel period. E. E. Brintnall, City Clerk, acts as secretary of the Board of Public Works and keeps the electric plant accounts.

PRINCIPAL EQUIPMENT
MUNICIPAL DIESEL PLANT
Elroy, Wis.

Diesel engines: One 120-hp, 257 rpm, 2-cylinder, Model Y-VA; one 240-hp, 257 rpm, 4-cylinder, Model Y-VA, and one 300-hp, 300 rpm, 4-cylinder, Model 32-E-14; one 450-hp, 300 rpm, 6-cylinder, Model 32-E-14; all Fairbanks, Morse & Co.

Alternators: One of 72-kw capacity with direct-connected 7.5-kw exciter, one of 155 kw with direct-connected 10-kw exciter, and one of 200 kw with 7.5 kw direct-connected exciter; one 300-kw alternator with belt-driven 10-kw exciter; all Fairbanks-Morse.

Governors: Woodward Governor Co.

Cooling Equipment: Two Young radiators.

Silencers: Three Maxim.

Air Filters: Three American Air Filter Co.

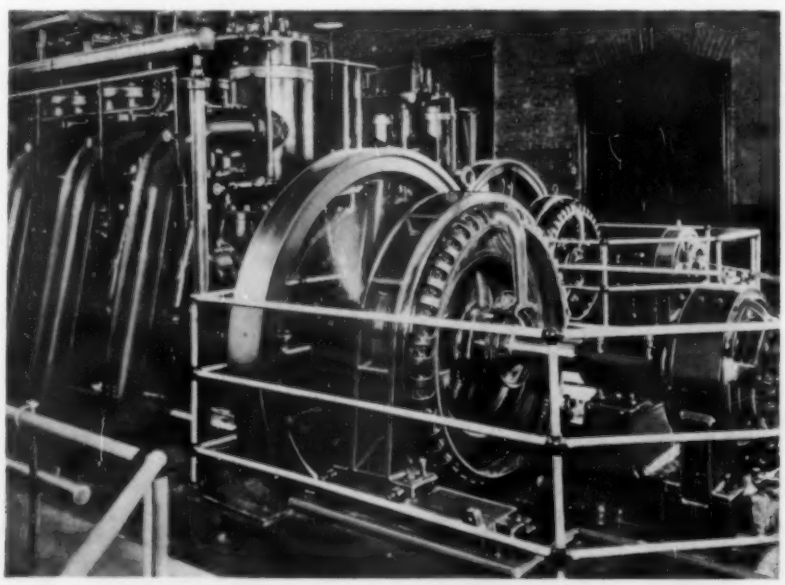
Fuel Oil Meters: Two Buffalo.

Lubricating Oil Purifiers: Three Honan-Crane.

Pyrometers: Two Alnor.

Distribution Transformers: Three 15 kva G-E and three 5 kva G-E for plant; G-E and Westinghouse for distribution system.

Distribution Meters: G-E mainly.



This new diesel makes the fourth engine generating electricity for Elroy.

Wheaton Uses New Airmarker

Easily visible porcelain airmarker is fastened to rooftop without damage to roofing

PORCELAIN enameled airmarkers fastened directly to flat or curved building roofs without puncturing the roofing surface or requiring framework are in use for the first time in Wheaton, Ill., as a project of the local Civil Air Patrol. This new method of securing the markers, while still subject to the time test, has been favorably received by CAA.

The engineering of the Wheaton airmarker and the development of this installation method was done by the Porcelain Enamel Specialties Co., Baltimore, Md., at the request of Squadron 611-12 of the CAP, located near Wheaton. Its design consists of a series of flat sheets of a standard shape which permits the construction of any letter or numeral desired by altering the arrangement of the units. A slight lap is provided at each joint.

Porcelain enameled sheets are particularly suited to this method of installation, since they have a long life and require a permanent mounting. The individual sheets are of a special enameling steel which has been treated on all surfaces with a ground coat and with several additional color coats on the face. Each coat of porcelain enamel is fused directly to the steel at temperatures between 1,450 and 1,600° F., a process which makes the coating an integral part of the base sheet.

Installation of these airmarkers has never been a major problem, for the individual sheets have been furnished either with or without punched fastener holes on the edges, permitting application either with fasteners or an adhesive, as required. However, CAA's concern over possible roof faults resulting from fastening the panels through built-up roof surfaces caused a study to be made of the problem in connection with the new Wheaton airmarker. The method which was developed and used is suggested for application of porcelain enameled airmarker panels to built-up roofs having a pitch not exceeding 1½ inches:12 inches. See also Figure 1. The method is as follows:

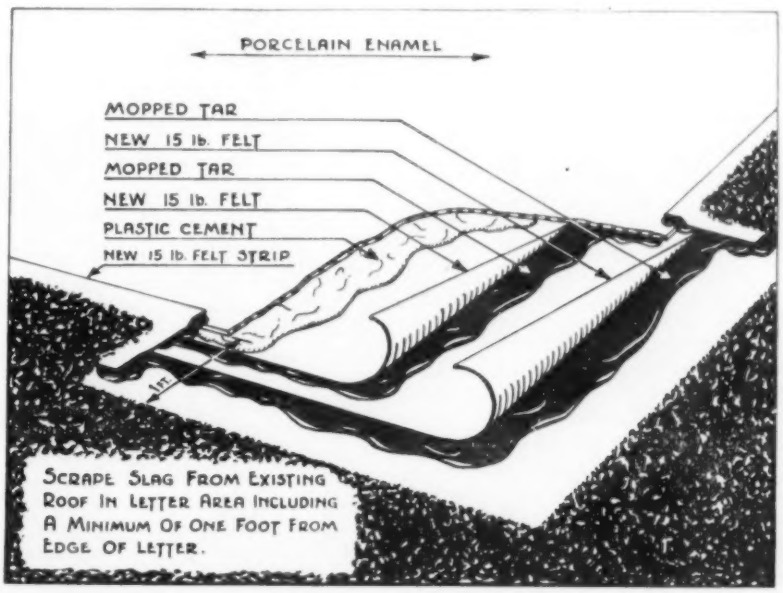

PORCELAIN ENAMEL
MOPPED TAR
NEW 15 lb. FELT
MOPPED TAR
NEW 15 lb. FELT
PLASTIC CEMENT
NEW 15 lb. FELT STRIP
SCRAPE SLAG FROM EXISTING ROOF IN LETTER AREA INCLUDING A MINIMUM OF ONE FOOT FROM EDGE OF LETTER.

Figure 1.

The Wheaton, Ill., signs as they look from the air.

1. Remove slag from area the letter is to occupy, allowing a minium of 1 foot beyond the entire perimeter of the letter. The slag should be removed down to the felt.

2. Mop down 2 new layers of 15-pound felt in this area with pitch or asphalt (depending upon the type of roof), but do not mop the top layer of new felt.

3. Trowel a ⅛-inch coating of asbestos fiber asphalt plastic cement on the area to be occupied by the letter. This cement should be prepared for troweling by adding enough portland cement to give it a thick consistency.

4. Set letters into the bed prepared as above. Where the panels lap at the edges and intersections, apply a liberal coating of litharge of lead between the porcelain enameled surfaces.

Storm Sewer Design Aided by

Aerial Topographic Mapping

New Rochelle, N. Y., gets topographic survey at a quarter of the cost of the work by ground crews

By THOMAS B. RAY
City Engineer
New Rochelle, N. Y.

THE city of New Rochelle is mapping its 10-square-mile area by "aerial topographic mapping" or "photogrammetry," to use the more scientific term. So far as is known, this is the first city in the East to have its entire surface area "contoured" by this method. The aerial survey will give the city an accurate topographic map at approximately one-quarter the cost of maps made by conventional ground survey work.

Immediate Objective

The immediate objective in obtaining this topographic map is to be able to study the requirements for sanitary and storm drainage facilities as a whole, rather than piecemeal. While the southerly half of the city is quite well developed and heavily populated, the northerly portion consists largely of estates, a golf course, and farms, much of which is scheduled for early housing development. To meet the drainage problems which will arise, it is imperative that the city's Department of Public Works have an accurate topographic map to furnish the basis for all over-all designs and cost estimates. Such a map will also permit correlation of new facilities with the already established sanitary and storm sewers.

What Aerial Map Work Requires

To make an aerial topographic or photogrammetric map requires four basic steps.

1. The actual aerial photography, which is done by flying special cameras at predetermined altitudes.
2. Establishment of certain ground control stations of known elevations, these stations to appear progressively in the aerial photographs as they are taken with three or more stations always appearing in the two adjacent pictures
3. Transforming the aerial pictures in a special instrument into stereoscopic or third-dimensional pictures on which contour lines can be followed by the eye
4. Transferring these contour lines by pantograph to map paper. (Steps 3 and 4 are carried out simultaneously)

The interesting part of steps 3 and 4 is that contours can be followed through many obstructions, such as woods and undergrowth, with greater accuracy than ground crews can interpolate on the spot.

The principal advantage of photogrammetry is its speed, resulting in saving time and money. To do the same work with ground crews, meeting the New Rochelle topographic requirements, would take five years or longer. By photogrammetry, the maps will be completed in about six months. The cost is estimated at less than 25% of the cost of doing the work with ground crews.

After the project is completed, the city will have available topographic maps or contour maps of the entire city, showing 5-foot contours. The maps will be mounted on metal sheets for permanence.

These contour maps will be 24 inches by 36 inches in size, with a horizontal scale of 200 feet to the inch, and will show all streets, buildings, parks, railways, bridges, drainage, wooded areas. It is estimated that 17 individual sheets will be required to cover the entire city area.

Small Prints Also Supplied

The engineering firm doing the entire work, the photogrammetric division of Lockwood, Kessler and Bartlett, Brooklyn, N. Y., will also provide the city with a single topographic map showing 10-foot contours at a scale of 600 feet to the inch. This map, in addition to contour information, will show streets and public buildings. The scale does not lend itself to the showing of all private dwellings.

Another item to be provided will be a set of aerial photographic prints approximately 9 inches by 9 inches, on a horizontal scale of 600 feet to the inch, with sufficient overlap to permit stereoscopic study of any portion of the whole area. Such photographs will be invaluable for studying the "land-use" of any particular section, such as the density of timber, state of improvement, or cultivation of land.

A fourth item will be a title sheet and index map of the 5-foot contour maps, scaled at 2,000 feet to the inch. On this map, principal streets will be shown.

The fifth item will be an index map of the photographic prints.

The cost of the survey is estimated at $21,000.

Railroads Receive Smoke Awards

RAILROAD smoke abatement took on a competitive angle in Indianapolis, Ind., December 4, as City Combustion Engineer Robert L. Wolf began awarding monthly blue and black ribbons for good and bad records.

As the plan was inaugurated at the Railroad Smoke Control Board's regular meeting in Union Station, Wolf presented two blue ribbons to the New York Central and two black ribbons, one each to the Indianapolis Union (Belt) and the Baltimore and Ohio Railroads. Determinations of the awards were based on November reports by city smoke inspectors.

According to Wolf, the New York Central excelled in both the in-service locomotives and roundhouse competition, while the Belt and the Baltimore and Ohio were at the bottom of the list in the roundhouse and in-service classes, respectively. Until recently, the New York Central had been the chief smoke-control violator of the seven Indianapolis railroads, Wolf said.

How Midland Has Profited by Planning

By C. W. MATTHEWS
Principal Associate
Ladislas Segoe, Planning Consultant
Cincinnati, Ohio

A NEW airport free! Believe it or not, that about sums up one of Midland's more notable accomplishments during the past year or so.

Midland, Mich., widely known as the home of the Dow Chemical Company, is a fast-growing, progressive city of 15,000 that is now planning and constructing facilities for nearly double its present population.

In 1925, a city plan was prepared. At that time, the city held less than one-half its present population and comprised only one-third of its present area. At the end of the war it was apparent that Midland had outgrown the 1925 plan; so early in 1946 the preparation of a new Master Plan was undertaken. Already numerous improvements recommended in the Plan are being carried out. One of the more notable of these, as indicated, is the new municipal airport.

For over fifteen years, Midland has had a local airport—located close to the center of town and in the path of residential development. Land-use plans and other studies revealed the need for this land for residential development. A general area northwest of the city was recommended as most suitable for a new municipal field by reason, among others, of proximity to the city while still outside the urbanizing area and not in the line of anticipated city growth. With the cooperation of state aeronautical officials, after inspecting and appraising about a dozen alternate sites, a suitable area northwest of the city was selected. The city then put the old airport on the market and disposed of it with sufficient profit to acquire the new site and more than finance necessary improvements, with state and federal aid. The new Midland airport is believed to be the first in Michigan to qualify under the current federal program.

New School and Park Site

As a by-product of the sale of the old port, a new school and park site, both recommended in the Plan, are insured in this area. Soon the city will have in operation a first-rate airport adjoining lands proposed for a parkway. Also adjoining this new port will be the county fair, where buildings and other facilities can be used interchangeably to the best interests of both port and the fair.

Other notable improvements growing out of the Plan are a 40-acre park site recently acquired in the rapidly expanding northeast section of Midland. In addition, one new school is nearing completion while two others are being enlarged, this construction being coordinated with other features of the Plan.

A twenty-year-old question, where to locate the new bridge for Route M-20, apparently has been settled, and a marginal cross-town course has been selected for this important state route.

Diagonal Parking Eliminated

Diagonal parking has been eliminated to improve traffic movements in the downtown district, and service drives are being provided in the Circle business section. The inadequate riverfront parking lot is being expanded and other parking facilities are being acquired in the downtown district. In addition, the revised zoning ordinances soon to be adopted provides for off-street parking areas in connection with commercial and industrial improvements as well as for other uses in the various districts.

Besides these, a new water system, supplying both Midland and Saginaw, is under construction, extensive additions to the storm sewer system are planned, and new pavements are being installed.

Above: Previous diagonal parking restricted traffic flow. Below: Present Main Street parallel parking.

Below: A small metered off-street lot furnishes handy parking for shoppers.

Above: Site of new airport, with the runway grading perceptible at left.

The American Municipal Association Reorganizes

By ROY H. OWSLEY *

THE American Municipal Association recently effected its first major reorganization. Established in 1924 as the national federation of state leagues of municipalities, the Association, until this year, had admitted no other classes of members. Under its newly revised constitution, however, "AMA" membership is now open to cities of more than 100,000 population and to certain other organizations in the public administration field, with voting rights granted to both city and organization members. In addition, the new constitution provides that every municipality holding membership in a member state league of municipalities shall be, by virtue of that fact, an "affiliate member" of the American Municipal Association.

Direct City Memberships

Simultaneously with these basic organizational changes there has been established within the American Municipal Association a special department—known as the American Municipal Service—to serve its member cities of more than 100,000 population exclusively, with the Association continuing to serve the smaller municipalities through their respective state leagues of municipalities. Including a variety of specific services too numerous for mention here, the American Municipal Service, first of all, is designed to provide for the great metropolitan cities of the country a national clearing house of information and advice on their common problems, geared to their peculiar needs and conditions, in contrast to the programs of other organizations whose research and information service programs are not so concentrated but purport to cover all sizes of municipalities. A second major function is to provide much more effective representation of municipal interests and views before the Congress and the various federal agencies than has heretofore been possible, at the same time providing a stepped-up program of reporting federal developments of interest to municipal officials.

Like that of the state leagues of municipalities—and in contrast to that of virtually all of the other national associations serving municipal officials—membership in the American Municipal Association is held by cities in their corporate capacity, not by individual officials. And the Association's services are therefore available to *all* major officials of the member cities. Direct membership in the American Municipal Association entitles any city to all the benefits of the American Municipal Service, there being no special assessments or service charges imposed. Under the current schedule, the annual membership dues range from $750 for cities with populations between 100,000 and 250,000 to $4,000 for a city of more than 5,000,000 inhabitants.

Organization Memberships

The new provision in the American Municipal Association constitution for "organization" memberships is designed to serve as a vehicle for effecting closer cooperation and coordination among the many separate, independent organizations of municipal officials and employes. Permitting a considerable degree of flexibility in such membership agreements, the newly amended constitution provides that "any non-profit organization of public officials or employes national in scope and having objects and purposes compatible with those of the American Municipal Association . . . may affiliate . . . as an organization member . . . upon mutually acceptable terms and conditions."

In some cases, such affiliation may extend to establishment of the national secretariat of the "organization member" as a component part or operating department of the American Municipal Association. An example is the newly organized National Association of Municipal Legislators, which applied for membership on this basis at the AMA Annual Conference held in New Orleans on November 2-6.† At the opposite extreme, however, it would be possible, if determined to be mutually beneficial and acceptable, for other groups to become "organization members" of AMA without surrendering any of their autonomy or control over their internal affairs, and to continue to be independently financed—the affiliation in such cases amounting, in effect, to nothing more than a working agreement as to cooperation and the coordination of organization programs insofar as they might overlap or be directed at a common goal. But whatever the other terms and conditions agreed upon, the "organization member" in every case will be entitled to designate one person to serve as its representative on AMA's governing board, this being expressly provided in the new constitution.

In all cases, moreover, organization membership is placed on a purely voluntary basis. The American Municipal Association has no desire to "put out of business" any existing organization carrying on a worthwhile program of service to cities or municipal officials. On the contrary, the new plan of organization memberships is designed to increase the combined effectiveness and influence of the many such associations now in existence and of any new ones that may be formed.

The Over-all Objectives

In sum, the basic purposes and overall objectives of the American Municipal Association's recent reorganization are as stated in the following excerpt from a brochure, just published, describing the American Municipal Service:

> The American Municipal Association, by admitting to membership the metropolitan cities as well as all members of state leagues of municipalities, gives the cities of America their first opportunity to speak with a single voice for municipal interests.
>
> The lack of a united approach toward policy questions affecting municipal interests has handicapped cities in presenting their point of view before the Congress of the United States and the many federal departments and agencies that administer programs involving federal, state, and city relations.
>
> AMA, through its new American Municipal Service, is now in a position to furnish this united approach. It brings more closely together, to their mutual benefit, the great cities that become its members, and the state leagues, representing more than 9,250 separate municipalities, and provides an effective medium for cooperation with the principal organizations of municipal, technical, and administrative specialists in the country.
>
> The pressing issues that now face American cities can be solved successfully only by united action. Through its new plan of organization and its expanded program of services, AMA will make such action possible.

* Mr. Owsley is Associate Director of the American Municipal Association and Manager of the Association's newly inaugurated American Municipal Service. He is also Secretary-Treasurer of the newly organized National Association of Municipal Legislators.

† THE AMERICAN CITY, December 1947, p. 111.

Looking into the plant's stilling basin.

The clarifiers and flocculators.

The stilling basin under construction.

Edmonton Builds New Softening Plant

By W. I. McFARLAND
Power Superintendent
Edmonton, Canada

THE NEW water-treating plant serving this city will allow improved service and will give us a capacity that our present demand indicates is required. It will operate in parallel with the existing plant, carry the entire city load a good part of the year, and combine with the old plant to carry peak summer demands.

Edmonton has experienced a fairly rapid growth in the last six years, and now has a population of about 114,000. This compares with a population of 90,000 in 1939. The city is not highly industrialized. The largest single industry is the packing plant. The municipality's principal function is that of a supply center for a large area that includes mining developments in the north.

The city takes its water from the Saskatchewan River, which flows through our boundaries. The river water varies greatly in hardness, from about 330 ppm in winter to 110 ppm in summer. On account of the winter hardness, our consumers voiced a strong desire for water softening, a request which was granted with the construction of a treatment plant in 1941. The plant uses the lime-soda-ash process and softens the water to 75 ppm.

Present Plant

The present plant has a capacity of 10 mgd and is not particularly efficient even at this figure, since the detention period is too short and considerable sediment is carried over onto the filters. Sometimes we must force the plant to handle peaks of 13 mgd, doing this by by-passing some water around the filters. Although the final product is perfectly safe, it is not properly clarified.

In order to bring the plant up to present requirements and to provide for some growth in our city, we decided to build a new treatment plant which could carry the entire city load for a good part of the year and could be operated in parallel with the old plant during the peak summer season. This plant is to have a capacity of 15 mgd and will soften, clarify, filter, and chlorinate the water.

How the New Plant Works

In receiving treatment, the water receives soda ash and alum through a pair of Omega feeders operating on the loss-in-weight principle. The lime will be fed by an Omega belt feeder. This operation takes place in the influent well in one corner of the chemical feeder room. The water then passes through a Dorrco Squarex 115-foot clarifier with a 15-foot side-water depth. Passing out of the clarifier through a flume, the water enters a carbonation chamber where carbon dioxide is added. It then passes through a second flocculator and clarifier and to the second carbonation chamber. This chamber is at the extreme end of the basin. The water now returns to the filter building through the stilling basin; this is 115 feet wide with a dividing wall down the middle which will permit emptying either half. On reaching the side of the filter building, the water enters the filter influent flume and proceeds to the filters.

The rapid sand filters are of Roberts Filter Co. design and include underdrains and piping. Each filter has a capacity of 3.375 mgd and is approximately 42 feet square. The control tables are on a floor running down the west side of the plant from the chemical to the carbon dioxide building and are on the same level as the main floor of these two buildings. The Niagara filter backwash pump is in the basement of the carbon dioxide building and is powered by a 200-hp motor.

Carbon dioxide is produced by burning natural gas in what is really a gas furnace. The burned gases are cooled by passing through a heat exchanger where part of the heat is given up to cooling air forces through the exchanger. This air provides heat for the building in winter and goes to atmosphere in the summer. The products of combustion pass through a scrubber where they are cleaned and cooled by a water spray. The scrubbed gas is compressed and piped to the two carbonation chambers. The furnace was built locally; the scrubber and compressor are E. W. Baccarach Co. products.

Lime arrives at the plant by boxcar and is crushed and elevated to the storage tank by a Link-Belt conveyor with a hammer-type crusher. The storage tank will hold about 75 tons of crushed lime. Storage of other chemicals will be on the floor above the feeders, and the feeder hoppers will extend through this floor into the storage room. A Dorrco slaker conditions the lime.

Building conditions required that the structure be built on piles which are driven to a firm gravel stratum which lies from 15 to 25 feet below the footings. The plant required the use of about 10,000 cubic yards of concrete.

City Payroll-Income Tax Proves Its Workability

By RONALD E. GREGG
Executive Secretary
The Municipal League of Toledo

As a result of the very successful experience of both Toledo and Philadelphia with a municipal income or payroll tax, other cities considering its adoption should find this review of experience useful and valuable. Newest addition to "income tax" cities is Columbus, Ohio, whose city council recently enacted a municipal income tax of ½ of 1%. Patterned after the Toledo levy, the new Columbus measure became effective on January 1, 1948, for a five-year period.

TWENTY-TWO months and $9,000,000 after passing the payroll-income tax, the City of Toledo, Ohio, is making excellent progress in three directions:

Establishment of fiscal soundness
Realization of postwar plans
Extension of home rule.

The municipal income tax is a major addition to the local revenue structure. Repair of the city's old tax structure was an impractical undertaking. Additions to strictly local sources were inadequate or impossible. State and federal aid were helpful but uncontrollable. Increased state aid, if attainable, was too costly to the city.

Citizens' Research Report

The necessity for an extensive revenue addition was pointed out in Toledo by an unusually comprehensive citizens' research report in 1945. Of the city's total revenue, 75% came from local sources at that time. Service charges and miscellaneous sources amounted to $2.7 million, or 25% of the total local revenue figure. Generally speaking, all such charges had been raised previously to the limit of reasonableness and collectibility. Total property taxes (general, special assessment, and tangible personal property) amounted to $4.7 million, or 48%.

The Citizens' Finance Committee and city officials opposed new "nuisance taxes" as being insignificant revenue producers and detrimental to the consideration of any practical solutions. A tax on gross utility bills was thought to be illegal and later proved to be when Columbus tried it. Only real estate taxes remained on the list.

Briefly, Toledo could not or would not increase property tax rates. And valuations, made by the county (or state, on utilities), are 100%. The Ohio 1% (10 mill) over-all limitation for city, county, and schools is low, but a constitutional restriction. Additional levies must be approved by a 65% majority of the voters—another depression-period law enacted by the Legislature. Actually, not a single real estate levy for Toledo city purposes had passed, out of 44 put on the ballot since 1931. Even the final effort in 1945, with approval of the Citizens' Committee, met a similar fate.

As for state aid, action on behalf of cities through Ohio's rurally dominated Legislature is difficult, and distribution formulae are seldom favorable to the cities. Classification of cities for special or revenue purposes was eliminated years ago. Although state-aid in 1945 totaled $2,478,000, or 25% of the total city revenue, this amounted to little more than property-tax losses caused by the constitutional rate reduction.

A state income tax was not desired because in Ohio the constitution permits exemptions and provides that not less than 50% shall be returned to the collecting area. Obviously, if such a tax were enacted, or franchise and business taxes increased, cities would continue to suffer the hardships of rural control over distribution formulae.

Federal aid, it was pointed out, has little to do with day-to-day income, and it usually increases operating expenses.

How the Tax Works

With the addition of a levy on net profits of corporations, Toledo's tax was patterned on Philadelphia's payroll tax. Columbus follows the Toledo pattern, as did St. Louis, Mo., before its income tax was held unconstitutional by the court of that state in September 1947.

Enacted by the city council, the Toledo tax became effective March 1, 1946, and ceases December 31, 1950. It was conceived as part of a five-year program.

The tax applies to residents and those who "earn" in the city—our "daylight citizens." It encompasses resident businesses and non-resident businesses having an office and doing business in Toledo.

The taxable base for individuals is all wages, salaries, commissions, and other earned compensation of city residents, and such amounts as are earned in Toledo by non-residents. In the case of unincorporated business or professional activities, total net profits are taxable, or that part attributable to activities in Toledo by non-residents. As to corporations having an office or place of business in Toledo, that portion of net profits derived "as a result of work done, services performed or rendered and business or other activities conducted in the city of Toledo" is taxable.

A method of segregating net profits taxable by the city is offered where this cannot be done acceptably by company books. In essence the formula is determined by taking the average (arithmetic) of three ratios: (a) local real and tangible personal property to total real and tangible property; (b) receipts from sales, services, and credits within Toledo to gross sales, services, and credits, and (c) personal compensation, except general executive officers, for employes within the city to total personal compensation, except general executive officers. If a just and equitable result is not thereby obtained, the Board of Review is authorized to substitute other factors.

Voters Approve

Allegedly because no exemptions were provided, the local Political Action Committee, sponsored by the Congress of Industrial Organizations, successfully circulated petitions requiring a referendum vote on the new tax. Spokesmen of the American Federation of Labor approved the tax as necessary to the city's welfare. At a special election in April 1946, for this one issue, a majority of citizens approved the tax.

The municipal income tax has not been submitted to voters in any other city.

Legality

Toledo is a "home-rule" city, deriving certain direct powers from the state constitution if the state has not preempted the tax source or otherwise limited municipal authority. The Ohio constitution provides for an income tax, but no enabling legislation has been adopted. This is the line of approach in the Toledo instance.

Precedent arises in the case of *State ex rel. Zielonka* vs. *Carrel* (99 O. S. 220). The court says, in part:

> There can be no doubt that the grant of authority to exercise all powers of local government includes the power of taxation, for without this power local government in cities could not exist for a day. It is a known fact that the necessary expense incident to the maintenance of the government of a modern city transcends all other forms of governmental expense.
>
> The constitution, recognizing the necessity of this grant of power, conferred it on municipalities, subjecting them only to the staying hand of the General Assembly in respect to its limitation.

In the case of *Charter Carburetor Corporation* vs. the *City of St. Louis et al.* (September 8, 1947), the Missouri court holds that the Legislature of that State must extend the right to tax before it can be used locally.

Philadelphia obtained special (classified) legislation from the state.

Numerous other phases of legality and applicability were determined by Philadelphia's contests. These are reviewed in the report of the National Institute of Municipal Law Officers (*Municipalities and the Law in Action*, 1944, Green and Wernick, p. 148) and in an unprinted address by Hugh S. Jenkins, Attorney General of Ohio, before the American Bar Association (September 23, 1947).

Resulting Changes in Tax Structure

The 1% rate in Toledo resulted in collections of $4,051,809 in the 10 months of 1946 following enactment. Estimate of income for 1947 is $5,000,000.

In Philadelphia the payroll tax is reported to approximate 25% of current revenue in 1946. At a 1.5% rate during 1940-41-42, the yield averaged $19.5 million. With a 1% rate thereafter, the average yield is more than $22.6 million. The stepped-up rate of economic activities is the major factor resulting in increased collections.

The St. Louis experience did not last long enough to establish the fruitfulness of this revenue source in that city.

In Columbus, Ohio, the rate is ½ of 1%, and the tax is expected to yield from $2,500,000 to $3,000,000 a year.

Wide fluctuations in annual yield are expectable in any income tax, especially over a period of years. In Philadelphia, the lowest collection was $14.8 million; the highest, twice that amount (and at the reduced rate). It should be quite apparent, therefore, that since the nature of municipal expense is relatively stable, this new revenue source implies the necessity for long-term fiscal planning and unusual extensions to expenditure control. First control tool in this case is the levy rate.

Probably the minimum of a five-year period needs to be adopted for expenditure control. Recurring and replacement improvements may be scheduled tentatively for the period and adapted to current budget programs as actual revenues and the authority of council-in-office permits. More of the permanent improvement program may be handled on at least a partial pay-as-you-go basis. Callable bonds may be used more extensively, permitting more rapid retirement during periods of surplus collection and readjustment.

Collection Methods

Employers are required to deduct the tax from their employes' salaries and wages, as is done for federal income, social security, and state unemployment taxes. The deductions, which are approximately 85% of the total Toledo tax, are forwarded to the city quarterly. In Philadelphia, others subject to the tax pay it after the end of the year. In Toledo, city residents employed outside the city, professional persons, and businesses are required to file a declaration of estimated earnings and make installment payments in a manner similar to federal provisions for individuals having an annual income of $5,000 or more.

To reduce tax-enforcement costs, the Philadelphia return forms require a reconciliation with the federal income-tax report. The Toledo and Columbus forms, more simplified, are also co-ordinated with the federal report. Those having no taxable income other than that from which the tax was withheld are not required to make a report.

Toledo has completed a short-form annual report applicable chiefly to business returns. It starts with net taxable profits for federal purposes, provides for additional income taxable for Toledo purposes but not federal, and deducts income taxed by the United States but not by the city. The sworn statement includes an agreement to produce complete copies of the federal return and/or company books, if requested, for an office audit.

Other reporting forms—withholding, annual declaration of taxable income, quarterly adjustment, etc.—are similar to federal forms and reporting periods.

Approximately 15% of the taxpayer accounts are on a fiscal year differing from the calendar year. These are scheduled accordingly, so that notices and proper report forms in adequate quantity are mailed in due time to each taxpayer requiring them.

In the beginning, potential taxpayer lists were prepared from available mailing lists. Unfortunately, federal-income-taxpayer lists are not yet available even through the state, because the latter does not apply an income tax. To supplement the list, field representatives are assigned to the several field districts throughout the city. New incorporations, partnership creations, business licenses, etc., are sources for finding new accounts.

Special administration is provided for this tax source. The position of tax commissioner is created to head the Income Tax Division. He is required to prepare rules and regulations, subject to approval of the Board of Review. The latter body is composed of the Director of Law as chairman, the Director of Finance as secretary, and the City Auditor.

For administrative purposes, the Tax Commissioner has subdivided the responsibilities between a chief counsel, chief cashier, chief auditor and office manager.

The counsel directs the work of the superintendent of collections and investigations, who in turn, supervises nine district investigators, four correspondents, and stenographers and typists as needed. The chief cashier has two assistants. The chief auditor, through an assistant, supervises six field auditors, two assistant field auditors and an administrative clerk; four internal auditors, a file supervisor and four file clerks, and a bookkeeping supervisor, two machine operators, and two general clerks. The office manager supervises the mailing, messenger, storekeeper, and watchman staffs.

The actual size of the staff has and probably will fluctuate as needs become more definitely established. The cost of administration was $100,000 the first year and was budgeted for $200,000 thereafter. The budget will be more than adequate. Percentage-wise, this cost is not high in comparison to collections.

An ever-increasing problem of central cities [declares Mr. Gregg] is the escaping taxpayer who uses the city facilities by day, but retires to a suburban community at night. The city builds according to peak daytime needs caused by him and even extends many services to the boundaries or into his nighttime community.

City-county consolidation is seldom the practical answer. Annexation is frequently impossible. Rate differentials are usually prohibited by law or are unrealistic. A federation of communities is but a vision on the horizon. However, an earnings excise tax levied by the central city has the merit of reaching the core of the problem.

Use of Revenue

The Toledo income-tax ordinance states the general purposes, with ceiling limitations for which the proceeds may be used, and establishes priorities. These are related to a five-year expenditure program developed by a citizen advisory committee authorized by the city council and appointed by the city manager in 1944. This report, completed in 1945, considers the needs of three overlapping local taxing districts: county, city, and public schools. It provides for payment of public debts not being retired according to original maturity schedules, adequate levels of service, deferred maintenance of public properties, and replacement of obsolete operating equipment postponed during depression and war years and the most essential permanent improvements. In brief, the limitations adopted are—in priority order:—

1. Cost of tax collection (not limited, but estimated not to exceed 4 percent)
2. $1,338,543 annually for certain debts (refunded from 1936 through 1945)
3. Up to $800,000 additionally each year for general city-service operations
4. Up to $250,000 annually for deferred maintenance and equipment replacement
5. Up to $550,000 annually for specified permanent improvements on pay-as-you-go basis
6. Up to $480,000 for county or school purposes (apportioned by a special budget commission)
7. Use of surplus to reduce other city indebtedness existing at the time the ordinance was enacted.

Most other cities are not exercising expenditure control according to a five-year program. Rather, debts and increased current costs receive primary attention.

The Toledo experiment with payroll-

JAMES B. CLOW & SONS . . . . . COSHOCTON, OHIO

BIRMINGHAM, ALABAMA . . . . NATIONAL CAST IRON PIPE

I always like to hear my boy say

"THANK YOU VERY MUCH"

and that is what I say to you today

KENT S. CLOW*

During the war years we were very grateful to you men in the water works field for your understanding of the fact that we could ship our products only under regulations established by our government. Well, you say, the war has been over for two years and cast iron pipe is still in short supply—and badly needed for extensions, improvements, and new installations of water supply systems throughout the country. What's wrong now?

But cast iron pipe is not in short supply. It is true that our product is sold for several months ahead—but it is also true that our shops have been working two shifts a day throughout the past year and are producing more pipe than ever before in the peace-time history of our company. Yes, production is great—but the demand is much greater.

And so, good friends, we must again ask you to bear with us. You have been most helpful in anticipating your requirements and placing your orders well in advance of actual need for delivery. For this, we do want to say—"Thank you very much."

Since 1942, our company has acquired the Eddy Valve Company of Waterford, New York, and the Iowa Valve Company of Oskaloosa, Iowa. Now we are better equipped than ever to provide the water works of America with everything they require for their distribution systems. We hope before many months to be able to give you the service to which you are entitled.

For your understanding of our problem, for your kindly patience, and for your whole-hearted cooperation—we most cordially say

"THANK YOU VERY MUCH"

*President of James B. Clow & Sons, General offices at 201-299 N. Talman Ave., Chicago, Ill.

REVENUE SOURCES OF CITY OF TOLEDO, OHIO
1945-1946
(In Thousands)

Source	1946 Amount	1946 % of Total	1945 Amount	1945 % of Total
Property Taxes	$ 4,935	31.6	$4,790	48.0
Real Estate, Special Assessments, Tangible Personal Property.				
Service Charges	3,208	20.5	2,492	25.0
Licenses, Permits, Fees, Admissions, Water Charges, etc.				
*State-Shared Taxes	3,250	20.8	2,478	24.9
Miscellaneous	214	1.4	208	2.1
Payroll-Income Tax	4,000	25.7	—	—
	$15,607	100.0	$9,968	100.0

*Includes:

Source	1946 Amount	1945 Amount
Inheritance Tax	110	94
Beer and Liquor Tax	317	342
Cigarette Tax	11	9
State Sales Tax	799	589
Public Utility Tax	959	593
Auto License Tax	306	275
Gasoline Tax	618	441
Intangible Personal Property Tax	130	135
	$3,250	$2,478

income tax is part of a general experiment in planning public expenditures and a more practical approach to securing stability of municipal fiscal affairs. The experiment promises to give more satisfactory results than the freezing process secured by the denial of taxes or the limitations, as in the past.

In summary, the total experiment includes a comprehensive five-year overall expenditure plan related to an adequate revenue source; the restoration of balanced budgets and normal maintenance expenditure after a 15-year lapse; annual programming of essential and recurring public improvements on a pay-as-you-go basis; payment or creation of cash reserves to retire burdensome debts and reestablish credit reserves during good times.

Further steps to refine this approach are now being adopted or discussed. Actual construction is being postponed wherever practical, to avoid competition with private enterprise for scarce materials and a present shortage of skilled labor. Large improvements are being planned for times of slack employment and lower prices. More extensive use of "callable" bonds in new issues is being discussed, as a method of reducing the rigidity of annual debt service requirements along with increasing the economies of early repayment of debt during periods when collection of the income tax is easiest.

Southern City Problems Surveyed by Questionnaire

A STUDY of southern cities with 10,000 population and over, based on a questionnaire survey addressed to mayors and city managers, is being conducted by N. J. Demareth, Research Associate of the Institute for Research in Social Science, University of North Carolina, and Harlan Gilmore, of Tulane University, New Orleans. The study will be used in a chapter for a symposium on southern cities launched by the Southern Regional Committee of the Social Science Research Council.

In the letter enclosed with the 25-item questionnaire, it is pointed out that in the past rural life in the South has received disproportionate attention, as compared with urban life. "Today our cities are more important than ever and it is time we learn more about them," the letter declares.

Professors Gilmore and Demerath request that southern city executives return the completed questionnaires by January 15, or as soon thereafter as possible, along with copies of zoning and subdivision ordinances and maps of city metropolitan areas, if available.

Public Servants' Week

PLANS have been announced by the American Federation of State, County and Municipal Employes (AFL) for the nation-wide observance of a "Public Servants' Week" to focus public attention on means for providing better and more efficient public service. The week tentatively chosen for 1948 begins Monday, June 7.

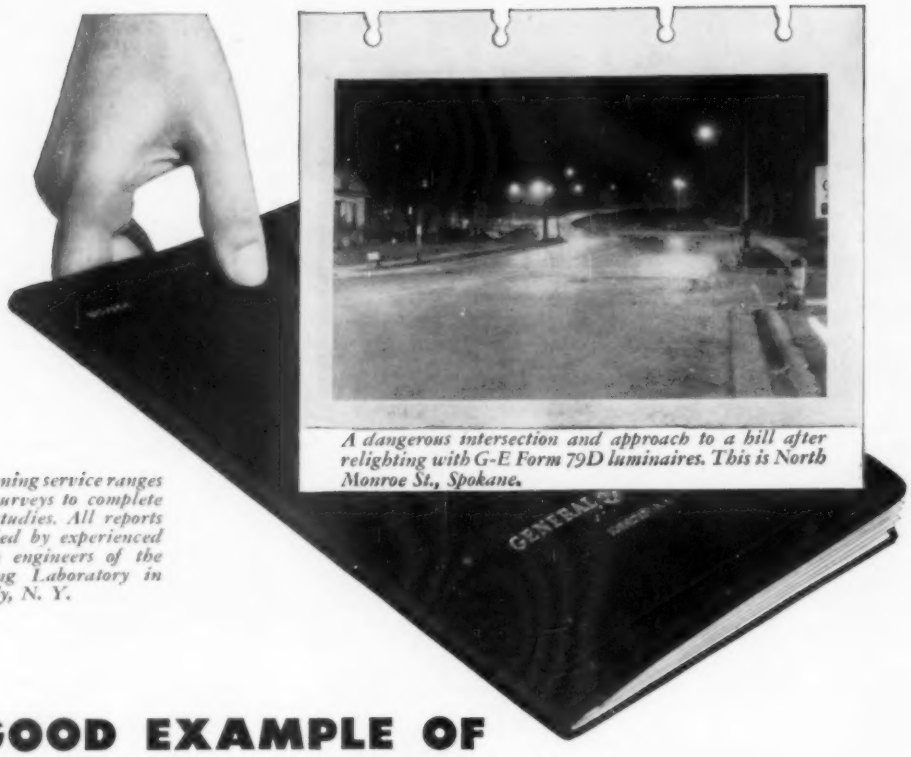
The Federation will invite other interested groups in the United States and Canada to cooperate in making the week a success. Among the Federation's objectives in establishing the plan are:

1. Serving the public better
2. Saving money for the taxpayers through increased productivity
3. Recognizing merit and fitness in public employment
4. Achieving reforms in public administration.

New Mayors Who Take Office January 1948

City and State	Mayor
Allentown, Pa.	Donald V. Hock
Altoona, Pa.	J. Lester Laughlin *
Amsterdam, N. Y.	Burtiss E. Deal
Batavia, N. Y.	Judd L. Perkins
Bogota, N. J.	George E. Quinn
Cincinnati, Ohio	Albert D. Cash
Columbus, Ind.	Robert L. Stevenson
Corning, N. Y.	F. C. Cole
Cortland, N. Y.	Elmer Payne
Covington, Ky.	William F. Rolfes
Detroit, Mich.	**Eugene I. Van Antwerp**
Dubois, Pa.	Patrick Dillman *
Dumont, N. J.	William H. Losee
East Rutherford, N. J.	William McKeown
Englewood, N. J.	M. Leslie Denning
Erie, Pa.	Sherman Hickey, Jr.*
Evansville, Ind.	William Dress
Farrell, Pa.	Michael Nevant *
Fort Lauderdale, Fla.	Reed A. Bryan
Fort Wayne, Ind.	Henry E. Branning
Gary, Ind.	Eugene Swartz
Geneva, N. Y.	Castner E. Rapalee
Glen Cove, N. Y.	Luke A. Mercadante
Greenville, Miss.	George F. Archer
Hammond, Ind.	Vernon Anderson
Harrisburg, Pa.	Claud R. Robins
Hillside, N. J.	James A. Tatem
Indianapolis, Ind.	Al Feeney
Ironton, Ohio	George G. Schweickart
Ithaca, N. Y.	Bert T. Baker
Johnstown, Pa.	Walter E. Rose *
Kingston, N. Y.	Oscar V. Newkirk
Knoxville, Tenn.	Edward L. Chavannes
Lackawanna, N. Y.	**John J. Janiga**
La Grange, Ga.	Duke Davis
Lebanon, Pa.	**William W. Focht**
Little Falls, N. Y.	John H. Ingersoll
Lock Haven, Pa.	Charles E. Herr *
Monongahela, Pa.	David M. Gillie *
Muncie, Ind.	Lester Holloway
Newport, Ky.	James E. Deckert
Niagara Falls, N. Y.	William R. Lupton
No. Tonawanda, N. Y.	Stanley Rosinski
Norwich, N. Y.	J. Frederick Benedict
Ogdensburg, N. Y.	Max J. Miller
Oil City, Pa.	William A. Morck *
Oneida, N. Y.	Charles A. Earl
Oswego, N. Y.	Frank J. Gould
Peekskill, N. Y.	Joseph N. Schneider
Plattsburgh, N. Y.	Horace F. Davies
Port Jervis, N. Y.	John Schoonmaker
Poughkeepsie, N. Y.	Horace S. Graham
Reading, Pa.	James F. Davis *
River Edge, N. J.	James Farrell
Rye, N. Y.	Karl T. Frederick
San Francisco, Calif.	Elmer E. Robinson
Schenectady, N. Y.	Owen M. Begley
Scranton, Pa.	George C. Beck *
South Bend, Ind.	George Shock
Titusville, Pa.	C. C. Hampton *
Tooele, Utah	W. Cecil Tate
Two Rivers, Wis.	Martin Zermuchlen
Uniontown, Pa.	Edward Sittler *
Washington, Pa.	Elmer R. Wilson *
Waterbury, Conn.	Raymond E. Snyder
Watertown, N. Y.	Henry A. Hudson
Weatherford, Texas	**W. Sadler**
Wilkes-Barre, Pa.	**Luther M.** Kniffen *
York, Pa.	Felix S. Bentzel *
Youngstown, Ohio	Charles P. Henderson

* In these Pennsylvania boroughs, the title of the chief executive is "Burgess."



A dangerous intersection and approach to a hill after relighting with G-E Form 79D luminaires. This is North Monroe St., Spokane.

G.E.'s planning service ranges from spot surveys to complete city-wide studies. All reports are compiled by experienced application engineers of the Illuminating Laboratory in Schenectady, N. Y.

A GOOD EXAMPLE OF

how to plan Street lighting

TO SAVE LIVES

GENERAL ELECTRIC ***helps work out traffic safety lighting program for entire city of Spokane.***

Just before the war, Spokane and the Washington Water Power Company installed a quarter mile of modern street lighting where accidents were exceptionally high. Results were immediate. In the next four years pedestrian accidents dropped from 15 to five. Pedestrian fatalities dropped from five to zero.

That started a city-wide survey. The power company, the city planning commission, and General Electric studied the entire city—analyzed accidents; zoned the streets to meet traffic problems; selected the most economical equipment for proper lighting. The resulting plan received an immediate and enthusiastic approval from the city council.

A few highlights: Top priority was given to the 10 miles of streets that accounted for more than half of all after-dark pedestrian fatalities. Downtown streets will be relighted with mercury-vapor lamps. Altogether, 5300 modern luminaires will be installed.

When You Contemplate New Street Lighting

General Electric Lighting Specialists will be glad to help any public officials—in collaboration with the electric-service company, if one is involved—in working out requirements for an entire city, or a single corner. While the service furnished Spokane is more extensive than is usually required, it is an example of the help General Electric can give. These specialists are located in G-E offices throughout the country.

General Electric makes every type of light source and luminaire that is economically feasible for any street lighting job, and is therefore sincerely interested in seeing that users get equipment that best meets their needs. *Apparatus Department, General Electric Co., Schenectady 5, N. Y.*

GENERAL ELECTRIC

Outdoor Lighting

Burglary and delinquency decline when residential streets are well lighted like this one in Gering, Nebr.

Gering Lights Residential Streets

THE main purpose of illuminating all the residential streets in Gering, Nebr., was to reduce night-driving hazards. The benefits, however, have been twofold. Chief of Police Shipley reports that there has not been one case of night-time burglary since street lights were installed in the residential area. He claims that the new lights assist him in patrolling the city and in detecting juvenile delinquency.

In 1941, modern street lighting was

By D. R. OWENS
Westinghouse Electric Corporation
Des Moines, Iowa

installed along Main Street, which is a heavy traffic highway. Four combination mercury-incandescent units were installed per block, with two 2,500-lumen incandescent lamps and one 400-watt mercury lamp in each luminaire. In 1945, Gering's citizens requested a comparable system in the residential districts. A plan was adopted so that all sections of the city would have proper illumination. The 400-watt mercury-vapor lamps were selected because of their success on Main Street, and because they are economical.

Gering is laid out on a square grid system with principal streets extending laterally from Main Street. Luminaires were specified for each intersection with another unit at the middle of each block. The system is so designed that

Rainy evenings do not worry Gering motorists. Visibility is excellent for three blocks despite the rain.

How much is a LIFE worth?

That's what you can SAVE by installing

CROUSE-HINDS NEON

Pedestrian Signals

At long last . . . . a signal that really curbs the **reckless pedestrian!**

He is one of the major causes of death and injury . . . . the reckless pedestrian who ignores the conventional traffic signal which he considers for vehicles only. His attention is arrested by the distinctive shape and brilliant lettering in Crouse-Hinds NEON Pedestrian Signals, the signals that deliver their message directly to HIM. He just naturally obeys their positive command.

Needed at all extra-busy corners, these signals are invaluable at complicated intersections, especially where it is hazardous for pedestrian and vehicular traffic to move at the same time in the same direction. Install them in the direct line of pedestrian vision at one of your "problem" intersections and note the outstanding improvement in pedestrian control.

These NEON signals are ideal for use as vehicle information signs, such as ROUTE 20⟶, ONE WAY⟶ and NO LEFT TURN. Their striking appearance catches the eye of the motorist in locations where ordinary signs would be "lost" in distracting surroundings.

The weatherproof Crouse-Hinds NEON Pedestrian Signals and Traffic Signs are cast aluminum, built to withstand heavy duty. The letters are all red or a red and green combination, 4-1/2" high. Available in one-line and two-line types, these signals can be mounted like a conventional traffic signal, on top of a post, on bracket arms, on a span wire, or on a mast arm.

Write for full details. Ask for descriptive circular, Type TNC. It contains catalog listings of the 14 variations that are regularly furnished.

A Nationwide Distribution Through Electrical Wholesalers

Crouse-Hinds Catalog 226 lists a complete line of traffic signals, beacons, flashers, and a series of controllers designed to help you solve your traffic control problems . . . from simple installations up to the most complex heavy traffic problem. Send for your copy.

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CONDULETS
FLOODLIGHTS
TRAFFIC SIGNALS
AIRPORT LIGHTING

the illumination on the principal residential streets is well in excess of the I. E. S. Recommended Practices, 1945. Units are mounted 29 feet above the road surface on 35-foot poles. The mercury ballast is mounted on the pole, and power is delivered to the residential system by seven 25-kw constant-current regulators. The conductor, with a ground clearance of 28 feet, is supported only by the luminaire poles. The job was done by the city's line crew under the supervision of C. R. Weaver, city power superintendent. These 188 mercury lamps furnish illumination for every intersection of the residential district in Gering.

It was realized that relamping and trimming trees around wires 28 feet above the ground would be a problem, and that the aluminum-painted poles would become unsightly if climbers were used. Therefore, a ladder mount was installed on a 1-ton truck. This apparatus simplifies all of the aerial operations connected with servicing and maintaining the entire street lighting system. Servicing activity has been reduced because, according to records kept by the city, the mercury lamps are lasting four times as long as the incandescent lamps did. They are burning far in excess of 5,000 hours per lamp.

An aerial ladder simplifies servicing Gering's new residential street-lighting system. Parked cars do not hinder the trimming and relamping.

Crime has decreased, and in addition Gering is an attractive, modern city at night, thanks to its new lighting.

Fort Madison Wants More Light

By PHIL E. MOORE
Chairman, Street Lighting Committee
Fort Madison, Iowa

FORT MADISON, with a population of 14,000, has done a better-than-average job with the funds made available for lighting streets and highways within its corporate limits, when it is realized that our average annual expenditure per capita for street lighting is only 44 cents. The average per capita cost for most cities in the United States ranges from 85 cents to $1.25.

In studying our lighting problems, the Mayor's Street Lighting Committee had the cooperation of Carter Lewis, Engineer, Union Electric Power Company, St. Louis; G. W. Coleman, General Electric Company, Chicago; Professor R. D. Holcomb, Bureau of Public Affairs, University of Iowa; and C. C. Buffum, manager, Union Electric Power Co., Fort Madison branch. Our recommendations are classified as follows:

PART I. URGENT—Installation of new and modern lighting equipment in the business district.

PART II. NECESSARY — Installation of additional residential lighting equipment.

PART III. DESIRABLE—Installation of modern lighting equipment on our arterial traffic thoroughfares.

Part I—Urgent

The committee has classified as urgent the installation of the entire new White Way in the city's business district. This recommendation is being made also by the Improvement of the Business District Committee. Material and installation costs have been discussed with various engineers, and we have found that the only method by which contractors will accept construction contracts is on a cost-plus basis. We have found that the rates offered by the Union Electric Company for installation, maintenance, and current consumed have been far cheaper than if a lighting system were constructed and maintained by the city. For example, our proposal for the White Way requires 48 lamps of 600 candlepower, which, if contracted for by the Union Electric Company, will cost $54.60 per lamp per year, or a total of $2,620.80. This figure covers installation, maintenance, and current consumed for one year and would cover a 10-year period, at which time a new contract would be in order. During the second 10-year period, the lights would cost $50.52 per standard, or $2,424.96. The third 10-year period would be at the rate of $41.88 per lamp, or $2,010.24. The cost of installation for the 48 modern fixtures, installed under private contract, would be approximately $21,600; the cost of electricity consumed for a year would be approximately $1,302.01; the cost of maintenance for this equipment would be approximately $300 per year.

	City-Owned	*Union-Electric-Owned*
1st 10 years	$37,600	$26,208
2nd 10 years	16,020	24,249
3rd 10 years	18,020	20,100
30-year period	$71,640	$70,557

Part II—Necessary

The committee has classified as necessary the addition of 28 street lights in residential districts which are at present without illumination. The committee feels that every intersection in our city should have a street light, and, in order to meet this requirement, it will be necessary to install 28 lights. This installation would add $770.40 to the annual overhead lighting charges which have been approved by the Council. The recommended sizes are 4 lamps of 400 candlepower, 14 lamps of 250 candlepower, and 10 of 100 candlepower.

In addition to the new installations in the residential districts, we must inaugurate a tree-trimming program to permit maximum efficiency from our street lights.

Part III—Desirable

Certain other improvements are recommended as desirable but not necessary at the present time. These improvements are to better the appearance of the city and can be taken step by step.

On Avenue G, it is recommended that from 10th Street to 20th Street 400-candlepower luminaires be installed with a 250-foot spacing. This would give three luminaires to a block. Avenue L should have 600-candlepower luminaires, spaced at 250 feet, from 23rd to 29th Streets. From 20th Street to 23rd Street and from 29th Street to 36th Street on Avenue L, there should be 400-candlepower lamps, spaced at 250 feet. On Avenue H, from 1st Street to 6th Street and from 10th Street to 20th Street, there should be new light-

INDIANAPOLIS Gets I. E. S. "Code" Lighting

...cuts accidents, saves lives

TODAY Indianapolis people have greater protection after dark than ever before; civic pride is growing; merchants report a noticeable increase in night shopping; and the police are enthusiastic about the way the city's new street lighting reduces traffic accidents, helps them fight crime.

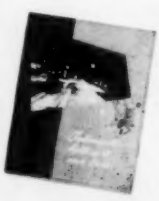
Typical of the quality of this new lighting is the installation at 42nd Street and College Avenue shown above. 10,000-lumen lamps are used here, with 6,000-lumen lamps between blocks. Luminaires are in alternate arrangement, 115 feet apart. About 1.5 footcandles are furnished at the intersection. Nine-tenths footcandles, the intensity recommended by I.E.S. for medium traffic, is provided along the rest of the thoroughfare.

Typical of the benefits in traffic accident reduction is the intersection of Massachusetts, College and St. Clair Streets—once a high fatality area. Between November 1, 1945 and October 16, 1946, *before* relighting, there were 15 night accidents at this location, one fatality. For the same period *after* relighting, night accidents dropped to 9, with *no fatalities* . . . a 40 percent improvement, not counting the precious life saved!

Indianapolis Power & Light Company, the progressive utility that worked with city officials in bringing about these improvements, reports popular approval of the program—urgent requests for its expansion.

THE WHOLE STORY

For the complete details, for additional accident reduction statistics, before and after pictures, and ideas you can use to promote better street lighting in your community, write for your copy of "Indianapolis lights up to save lives."



The Street and Traffic Safety Lighting Bureau, NEMA, 155 East 44th St., New York 17, N. Y.

ing if a new highway is placed on this route. An alternate is Avenue E if it should be extended.

The most modern arterial street lighting consists of street standards similar to those which were recommended for the White Way system, approximately 16 feet high, with a 6-foot upsweep arm holding a glass-enclosed shield luminaire.

The members of the Street Lighting Committee feel that once this program is started, and the general public can see the value of this modernization, it will be a far easier task to modernize the remaining districts of the city which need new street lighting.

Traffic conditions and increases in the residential areas due to additions, etc., should be continually studied, and future developments should govern the further organization of our street lighting system.

The suggestions made by the committee in Parts I and II have been approved and contracted for by the City Council. Part III is being given serious consideration by the Council, and they expect to contract for a portion of this lighting. The expense of street lighting is paid out of the general fund of our city, which is set up at the beginning of the fiscal year in the budget.

The additions will merely be increases in the operating expenses in the budget and will continue to be a budget item for the length of the contract and until the contract is renewed by the city.

Street Lighting Notes

BURLINGTON, Iowa, has completed the installation of a new street-lighting system costing $115,000. It comprises 354 cast iron standards equipped with G-E luminaires, mounted at 25 feet to the light source and spaced 80 feet apart. The lamps, suspended from 6-foot brackets, consist of 252 lamps of 10,000 lumens and 102 lamps of 6,000 lumens.

H. A. VOLLMER
City Engineer
Burlington, Iowa

OUR city plans to install 16,000-lumen mercury vapor lamps for a mile along Main Street. The luminaires will be mounted 25 feet high on existing steel poles that are spaced 100 feet apart. With the new lighting, intensity will be about 1.4 foot candles, as compared with the present average of 0.5 foot candle.

THEODORE BRAATEN
General Manager
Gas and Electrical Dept.
Norwich, Conn.

From Moonlight to Street Lights

NOT until the horse-drawn age drew to its close was the old practice discarded of lighting the streets only on those nights when the moon did not shine. In the 1860's, a Detroit alderman fathered a resolution that the street lights be turned on, moon or no moon. It was referred to the city comptroller, who replied, in part, "Moonlight is not only the cheapest but the most popular. . . . It blesses but asks nothing in return. Let it shine." And so it did for many more years.

Today, street lighting is regarded as essential as any other utility. Practically all streets are lighted, although much of the lighting is being done with outmoded equipment of insufficient illumination and improper spread of light. The layman can put his finger on bad lighting when he sees it, or rather when he can't see. A measure of whether a street is properly lighted is the record of traffic accidents. Modern lighting usually brings a sharp drop in injuries and fatalities.

One of the first cities to install improved safety lighting on a large scale was Detroit, which now has several hundred miles of streets evenly lighted with modern equipment. Studies have shown that the improved lighting reduced night traffic fatalities by more than 50%. On one busy thoroughfare, Grand River Avenue, which carries upwards of 60,000 vehicles daily, modern lighting, in reducing the night rate to one-sixth of its former size, brought the night traffic death rate down to the day rate.

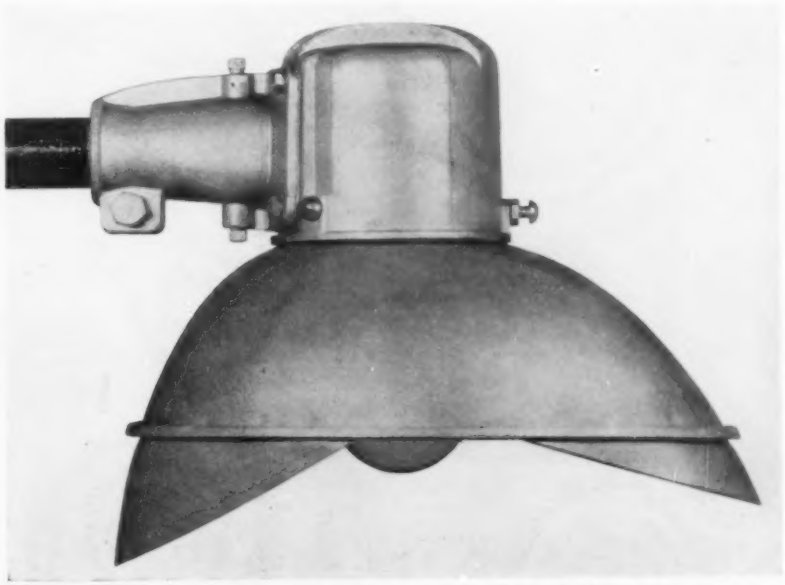
From "Making Better Use of Today's Streets," Chamber of Commerce of the U. S. A., Washington, D. C.

Sodium Lighting on New London Bridge

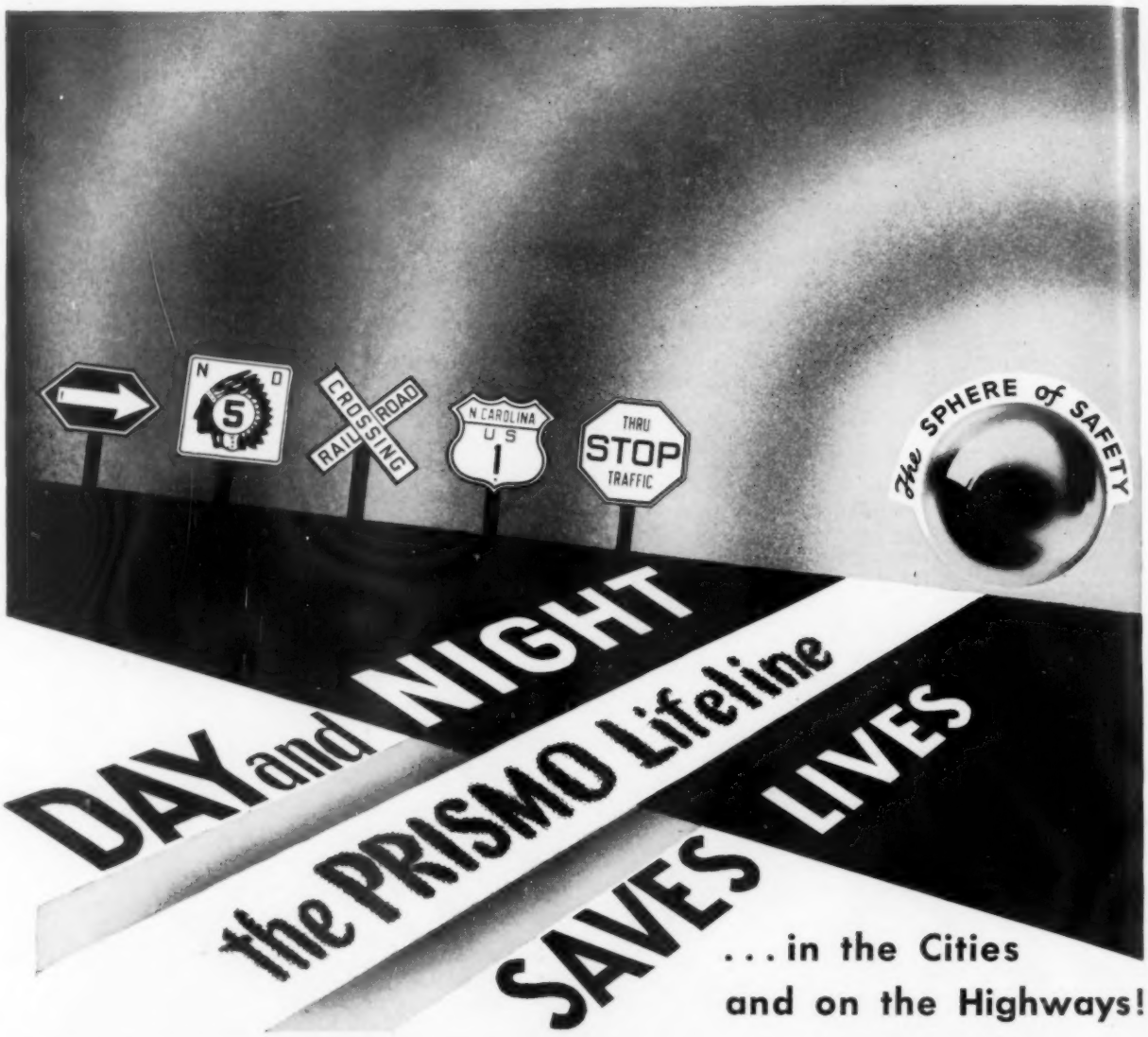
THE 1¼-mile Thames River Bridge, linking Groton and New London, Conn., over the Thames River, was recently added to the list of major bridges lighted by sodium vapor lamps when its 205 sodium lights were turned on for the first time. The new fixtures are spaced at 125-foot intervals for a distance of 2½ miles along the bridge and its approaches.

Major bridges with sodium lighting include the Golden Gate and Oakland Bay Bridges in San Francisco, the Western Gateway Bridge in Schenectady, the floating bridge in Seattle, and the Charter Oak Bridge in Hartford.

New Hood for Reflectors



A new hood for its post-war line of reflectors for suburban street lighting, interchangeable with older design reflectors, is being made by the Lighting Division of the General Electric Co., Schenectady, N. Y. It is a new design die-cast aluminum hood with slide-mounting slip fitter for 1¼-inch pipe and can be set for the 1,000- or the 2,000-lumen lamp. Although intended for multiple circuits, the hood can be adapted in some cases to series circuits.



DAY and NIGHT the PRISMO Lifeline SAVES LIVES

. . . in the Cities and on the Highways!

THE PRISMO LIFE-LINE OF PHILADELPHIA'S BENJAMIN FRANKLIN PARKWAY.
Note how clearly it stands out, even from high heights and far distances.

WHEN YOU SEE A PRISMO LIFE-LINE . . . .
You See A Safer City

PRISMO IS: The most *protective* highway marking material known, because it is the most scientifically *reflective* marking material known.

Standard in many cities, counties and states for all danger points, including no-passing zones, fog-lining and municipal marking.

Prismo outwears 3 to 5 applications of ordinary marking material. Gives 24-hour-a-day, widest angle visibility with reflectivity undimmed even after many years. Maximum economy, durability and diversity of application. WRITE FOR BULLETIN 461.

THE PRISMO SAFETY CORPORATION
HUNTINGDON, PA.

Winnipeg Prefers Trolley Coaches

By R. W. QUEEN-HUGHES
Winnipeg Electric Company
Winnipeg, Canada

NINE years ago, the Winnipeg Electric Company introduced trolley coaches to the citizens of Winnipeg. The initial installation was in the nature of an experiment, with six trolley coaches replacing street-cars on one of our main lines. Public acceptance was spectacular, for in a few days the six trolley coaches could not handle all the passengers. This and subsequent experience convinced management, the public, city traffic men, town planners, and the operators that trolley coaches have a major role in the transit modernization plans now unfolding.

By the end of the World War II, 30 trolley coaches were in operation, replacing three routes previously operated with street-cars. During 1946, an entirely new cross-town route, Salter Street, which had been developed for motor buses, was converted to trolley-coach operation. In 1947, 44 new trolley coaches were added to the fleet, with more on order for delivery in 1948.

The trolley coach was readily accepted because of its relatively low operating cost, its large passenger capacity, its comparative flexibility, its high speed and quick get-away, its curb-loading characteristics, and its smooth, silent operation.

Winnipeg and the surrounding municipalities are spread out along the banks of the Red and Assinboine Rivers. This has made sort of a "Y" development, with all arterial streets converging towards a hub at the intersection of Portage Avenue, which runs east and west, and Main Street, which runs north and south. This urban layout has posed a number of problems from both traffic and transit points of view.

Climatic conditions and social habits have also complicated the transit problem. A recent survey by the Metropolitan Town Planning Committee revealed that 97,300 persons live within a 30-minute walking distance of the heart of the business district. This figure corre-

These scenes show that Winnipeg has always been a pioneer in modern transit. At the upper left is the corner of Portage and Main Streets in 1893, when the first electric street-cars were competing with horse cars for the public favor. In 1948, trolley coaches will have taken over the work of the street-cars, making Winnipeg's transit system one of the most modern in Canada.

Talk About RUGGEDNESS!

The City of Pittsburgh with 1400

MI-CO PARKING METERS

reports in May 1947:

Only 85 calls due to Meter Failure.
110 calls not due to Meter Failure
AND these Meters have been in operation SEVEN YEARS

There's a record for RUGGEDNESS that's hard to beat!

Know any other Meter that can even match it?

BEFORE YOU BUY INVESTIGATE MI-CO

It's The One Parking Meter Designed For The Protection of the City

GET ALL THE FACTS *Write—*

MI-CO METERS 231 Court St., Covington, K

DIVISION OF THE MICHAELS ART BRONZE CO.

sponds almost exactly to the differential between summer and winter vehicle demand, which is 35%. Schedules on the transit system have to be adjusted to provide 35% more service in the winter than in the summer.

More people than ever before in the history of the city are quitting work at 5 p. m. and are posing a tremendous rush-hour problem for the public transit system. It has been calculated recently that 20,000 persons leave the downtown area daily from 5 to 5:30 p.m.

To cope with this terrific peak demand, anything that frees the flow of traffic is of value. The Portage and Main bottleneck has always been a transit headache. Speed of transit vehicles in the crucial rush-hour was reduced to 3 miles per hour in the business district last winter. The conversion of several street-car lines to trolley-coach operation and the rerouting of such lines tend to divert the traffic through the business district to a north and south direction on different traffic arteries.

Altogether, the Winnipeg Electric Company is committed to an expenditure of over $3,370,000 for transit modernization. The program will have been completed by August 1948, when 121 new rubber-tired vehicles will have been added to the fleet since January 1946—64 new trolley coaches and 57 new motor buses. Three new substations will have been built at a cost in excess of $560,000, and trolley-coach overhead will account for another $270,000. To accommodate the new vehicles, an addition to the trolley-coach garage is being constructed at an estimated cost of $75,000. Track removal and the rehabilitation of pavement will account for an additional $120,000.

Winnipeg was a pioneer in the use of trolley coaches in western Canada. Many cities have profited by our experience, as they, too, have turned to the use of trolley coaches. Winnipeg is still the largest operator of trolley coaches in western Canada. By the middle of 1948, the fleet will have grown to 94 units, and, if conditions are favorable, that growth will continue.

Improved City Transit or Urban Decline?

By G. M. WOODS
Transportation Section
Westinghouse Electric Corporation
East Pittsburgh, Pa.

AT THE turn of the century, traffic conditions in the centers of our largest cities became intolerable because of street-car and horse-drawn vehicle congestion. To alleviate this condition, the street-cars were removed from some streets and placed underground or overhead. Today's traffic problem calls for an equally drastic step: removing the automobiles from the areas of greatest congestion.

In the small towns, the open spaces provide parking room for those who live too far from their places of employment to walk to and from their work each day. As towns grow into cities, property values rise to the point where great areas cannot be devoted to the storage of vehicles. Public transportation becomes a necessity. In fact, the "riding habit" increases rapidly as population increases. For example, in 1945, revenue rides per capita of 1940 population, according to the American Transit Association were found to be as follows:

Cities over 1,000,000 population	428
Cities with—	
500,000 to 1,000,000 population.....	421
250,000 to 500,000 population.....	373
100,000 to 250,000 population.....	303
50,000 to 100,000 population.....	259
25,000 to 50,000 population.....	126

In some large cities, the public transportation task has been attempted with small-town tools. The result is not a "city" operating as a coordinating unit, but rather a group of villages with one corporate organization. Under these conditions, countless hours are wasted because of inefficient transportation and great distances between related activities.

Type of Vehicle

The population of a city gives an immediate indication of the number of transit vehicles required to serve its needs properly. Further study of the city and comparison with other cities of similar size and characteristics assist in reaching a more accurate estimate. Finally, the proper type of vehicle must be selected for each transit route. The exact number of vehicles required will differ, depending on the type selected. The factors determining the type of vehicle include topography, climate, existing transit facilities and their condition, character of territory served, density of population, and costs for labor, power, and fuel.

Generally, economic considerations

Trolley coaches used by the Seattle Transit System are successfully negotiating the steepest grades (17%); 307 trolley coaches are now in service in this city.

ACCURATE AUTOMATIC ADEQUATE . .

ALL THE WAY from MOTORIST'S finger-tip to City Treasury . . .

Accurate, cumulative coin register shows dollars and cents

Adequate, full-week capacity coin box with coin-dumping feature assures economical, scheduled coin collection.

Automatic collection completed with one quick motion. (Conventional sealed boxes available if preferred)

ONLY PARK-O-METER

provides the economy and safety of automatic operation all the way from motorist's finger-tip to City Treasury. Tamper-proof coin register keeps accurate, cumulative record of amount deposited. The large capacity coin box permits coin collection on scheduled weekly basis and the automatic coin-dumping feature speeds collecting operation. In fact the Park-O-Meter System will save your city $5.00 per year, per meter, over the sealed box collection method.

ASK FOR LITERATURE

describing Park-O-Meter's *From-Motorist to-Treasury* System. It's new . . . modern.

Magee-Hale

PARK-O-METER COMPANY

Commerce Exchange Building

OKLAHOMA CITY 2, OKLAHOMA

govern the type of transit vehicle used. Frequently, however, other conditions peculiar to a certain route dictate the selection of a specific type. The economically correct vehicle is the one which can produce the greatest net revenue after paying operating expenses and fixed charges.

Under average conditions, street-cars are the most economical means of handling passengers on city streets, where the number of people to be carried in one direction is greater than 2,500 in the peak hours. Trolley coaches are the most economical means when there are between 500 and 2,500 passengers per peak hour. Motor buses are the most economical when there are fewer than 500 passengers.

Trolley Coach Use Growing

The trolley coach affords a means of greatly improving city transit service and of effecting material economic improvement. In the last 10 years, the number of trolley coaches in use has increased 243%. When those now on order are completed, the increase will be 450%. In the same period, the number of street cars decreased 33%, and the number of buses increased 19%. Electrically propelled cars and trolley coaches, which represent 42% of the vehicles, accounted for 55.2% of all transit operating revenue in 1946. In cities of more than 250,000, cars and trolley coaches brought in 63.9% of the total operating revenue. Of the 50 companies purchasing trolley coaches before 1946, only 4 have failed to increase their trolley-coach operations. Many have regularly increased the size of their fleets year after year.

The popularity of the trolley coach has not been limited to cities of any particular size, although the greatest number has been purchased in cities having a population between 250,000 and 500,000. In this group, trolley coaches represent 14% of all transit vehicles: the figures will be 20% when those now being constructed are received. The cities in the group now operating trolley coaches have purchased one for every 2,390 of metropolitan population, and their coach programs have not been completed. In this group, Atlanta, with 433 coaches, will have a trolley coach for every 1,020 inhabitants.

Recent purchases include 250 coaches in Cleveland, 210 in Chicago, 200 in New York, 153 in Boston, 120 in Los Angeles, and 65 in Philadelphia.

Better Public Transportation

The most effective solution to the problem of automobile congestion is to make the public transportation system so attractive that more people will use it instead of driving their private automobiles. The transit operators can do their best by replacing old, unattractive cars and buses with modern cars, buses, and trolley coaches. Public opinion polls show that from the passengers' standpoint, trolley coaches are unexcelled. Economically, they warrant greatly extended application.

The public and many of its officials know that it is important to move *people*, not vehicles; to move transit vehicles with 40 to 60 passengers each, rather than automobiles with one or two. Streets were designed for traffic movement, not for vehicle storage. Too often, half the available street space is occupied by parked automobiles.

The prodigal expenditure of large sums of money for boulevards, parkways, drives, and extensive parking garages is often treating the symptoms while the disease grows worse. We must take a long-range economic view, and there is no better starting point than the transportation systems within our cities. Unless large numbers of people can travel expeditiously, comfortably, and economically, the inevitable result will be decentralization and the decay of our main business and shopping centers.

Ithaca's Municipal Parking Lot Is Successful

By F. J. LAVERTY
Superintendent of Public Works
Ithaca, N. Y.

ITHACA'S off-street municipal parking lot, with 65 parking spaces, has helped to solve a portion of that city's traffic-congestion problems, as well as add a pretty penny to the municipal treasury. This area, with direct access to several of the leading stores, has been used for parking for 22 years. However, prior to the installation of metered parking, all-day parkers took advantage of the free parking, giving the shoppers little chance to park.

Dual parking meters were installed and are used between 8 a.m. and 6 p.m., six days a week. Parking is free at other times. The meter charge is 1 cent for 12 minutes, 5 cents for 1 hour, and 10 cents for 2 hours. The lot was purchased by the city from the general fund, and improvements were financed with budget funds. The meters were purchased by the allocation of a portion of receipts. In 1946, the gross revenue totaled $5,200, with the net income $3,100. This year, for a seven-week period, the average income was $104 per week, an indicated yearly net income of $5,400. These seven weeks were during the summer season, when Cornell University was *not* in session.

No additional force is needed for maintenance. The lot is under the control of the police department, as are the street meters. Our street maintenance forces clean the premises and will remove the snow in winter.

We have just leased another lot to accommodate about 100 cars. This will be used for daily, weekly, and monthly parkers and will require an attendant.

The public appears to be well pleased with the new lot, because it gives everyone a chance to park. No longer is it a game of first there first served.

Ithaca's municipal parking lot has access to several of the leading stores.

MORE!

...of everything

As previously stated in 1947 Ads . . .

- ***Unrestricted use of pennies and nickels!***
  Insert pennies and then nickel, or vice versa. No remembering which coin to insert first.
- ***Cheatproof because all time is cumulative!***
  Pennies plus nickel in any sequence give full value for all coins used. Parker gets all the time he pays for.
- ***7-PLUS features in a Miller Manual!***
  Positive action . . . Less service . . . Less operating cost . . . Coin slot closer . . . Cumulates all time . . . Die cast durability . . . Interchangeable improvements.
- ***Miller performance brings reorders for more Millers!***
  Over 125 cities (many having original Millers for the past ten years) reordered during 1947 to serve enlarged areas.
- ***Quality in Penny, Nickel, or Quarter Miller meter is the same . . . and always the same price!***
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Zoning and Planning Notes

Edited by NORMAN WILLIAMS, JR.

With the assistance of Frank B. Williams and Edward M. Bassett

Zoning in Virginia— Permissive Use Restrictions

VIRGINIA. *Fairfax County* v. *Parker*, 44 South Eastern (2d) 9 (Virginia Supreme Court of Appeals, September 3, 1947).

A county zoning ordinance adopted in 1941 divided Fairfax County into seven types of use districts—agricultural, rural, residence, suburban residence, urban residence, rural business, general business, and industrial. The regulations for the suburban residence and rural residence districts contained a list of permitted uses, including one-family detached residences, summer cottages, tourist homes, private garages and stables, customary home occupations, farming of various kinds, churches, schools, and parks. Subsequently one Parker bought a plot in a suburban residence district and began to use it for a junk yard for broken-down cars. When the county officials sought to enjoin such use, Parker defended by an all-out attack on the constitutionality of zoning in general and of a large number of provisions of this ordinance in particular. However, he somehow failed to argue that the application of the residential zoning regulations to his particular piece of land was improper. The lower Court actually held the ordinance unconstitutional, on the extraordinary ground that the use regulations, instead of listing the prohibited uses and allowing all others, contained a list of permitted uses and forbade all others. On appeal, the highest Virginia court reversed.

Both the wholesale attack upon zoning and the criticism levied upon those parts of the ordinance which did not affect the plaintiff were brushed aside by the Virginia Supreme Court. As for the distinction emphasized by the Court below between ordinances permitting and those prohibiting listed uses, the Court pointed out that a junk yard was one use which undoubtedly could be excluded under *any* formula. The opinion reviewed at length the widespread use of the present form in American zoning ordinances. The permissive form of the ordinances upheld in both the leading Supreme Court case and the leading Virginia case on zoning was particularly emphasized. Moreover, of the Virginia ordinances submitted to the Court during argument, every single one contained some permissive clauses. The Court, therefore, held as follows:

> The determination of the constitutionality of such a legislative act turns on something deeper or more fundamental than whether the restrictions or limitations on the use of the property are phrased in the affirmative or in the negative. . . .
>
> If it is constitutionally proper to say to an owner, "You may use your property for residential purposes only. Such use does not include the following which are hereby prohibited," why is it not proper to say, "You may use your property for residential purposes only. Such use includes only the following which are hereby permitted"? Certainly, under the first formula the uses may be as severely restricted as under the latter. . . .
>
> It appears from an examination of the Fairfax county type of ordinance that the uses applicable to the highest restricted areas are dealt with first and those in the unrestricted area last. Since the uses applicable to the highest restricted districts are fewer in number, it is simpler and more expeditious to list the consistent or permitted uses than to detail those which are inconsistent or prohibited. When the unrestricted areas are reached, it is simpler and more expeditious to list the inconsistent or prohibited uses which are relatively few in number.
>
> Thus it will be seen that there is nothing strange or unusual in the form of the Fairfax county ordinance. It is no maverick in the field of legislative draftsmanship. Quite to the contrary, it is in the usual form which, by inference at least, has been judicially approved time and time again. So far as we can find, there is no reported case or other authority which supports the view of the trial court.

Camp Revival Meetings In Residence Zone

MICHIGAN. *Portage Township* v. *Full Salvation Union*, 29 North Western (2d) 297 (Michigan Supreme Court, October 13, 1947).

The regulations adopted for the "A" residence zone by Portage Township, in Kalamazoo County, Michigan, in January 1942, permitted one- and two-family dwellings, churches, etc., together with accessory buildings incident to these authorized uses. In the "B" residence zone, the regulations also permitted a variety of other multiple dwelling and agricultural uses. The building requirements provided that each residence should rest on a substantial foundation of stone or similar material, and should have sufficient windows, running water, and internal toilet facilities. Tents and trailers were specifically forbidden, except that a trailer could be used by one family for two weeks in a year on premises equipped with running water and sewerage facilities. The Full Salvation Union purchased a 16½-acre tract situated in both the "A" and "B' residence districts, and, after obtaining the necessary permits, built a tabernacle and a caretaker's residence on the premises. Camp meetings were held there—and numerous small buildings, trailers and tents were put up without regard for the ordinance, in order to accommodate those attending the meetings—for about two weeks in 1942 and for a longer period in 1943. It appeared that these meetings continued from early in the morning until 4 a. m. in the following day, and—in the manner of revival sects—caused a great deal of noise. In June 1944 the township brought an action to enjoin further similar use of the premises. The defendants argued that the various non-conforming structures should be permitted as accessory buildings for the tabernacle, and that the latter was lawfully erected as a conforming building under the provisions of the ordinance allowing "churches." The lower Court held in favor of the township, and the Michigan Supreme Court affirmed in October 1947—after four summer periods had gone by.

First, the small buildings and tents clearly did not comply with the construction and sanitary requirements set forth for residence. Second, the Court held that the camp meeting and services could not be considered in the same category as churches; and the small buildings were therefore not permitted as accessory to one of the uses expressly authorized by the ordinance. In this connection the Court emphasized the great difference to the neighborhood between the usual type of church service and a revival meeting. Third, the Court held that the ordinance as applied satisfied the test of reasonableness. Fourth, it was held that express statutory provision in the zoning ordinance was not necessary in order to permit invoking the injunctive remedy.

Definition of "Single Family"

VIRGINIA. *Carroll* v. *Arlington County*, 44 South Eastern (2d) 6 (Virginia Supreme Court of Appeals, September 3, 1947).

A single woman (a government lawyer) permitted a Negro family to move into the basement of her house in the single-family residence district of Arlington, and the wife in this family worked for the owner as a domestic servant. The family also paid some rent for the use of the basement. On the theory that two families were permitted by this arrangement to live in this house in a single-family residence district, *criminal* charges were brought against the owner, and a conviction was obtained. The Virginia Supreme Court reversed the conviction on the grounds that (1) the unmarried landowner did not by herself constitute a "family" under the terms of the ordinance, and (2) that, even if she did, the Negroes were not a family.

The Southern attitude expressed by the court is interesting.

> The draftsman of this opinion for more than half a century has had Negroes living in his basement or in the adjoining kitchen building which is a part of the residence. Sometimes the woman there has been married; sometimes not. It never occurred to him that in the contemplation of law two families were occupying the home. . . .
>
> It may be said in passing that no question of race is here involved. The law would be the same if this basement family were white.

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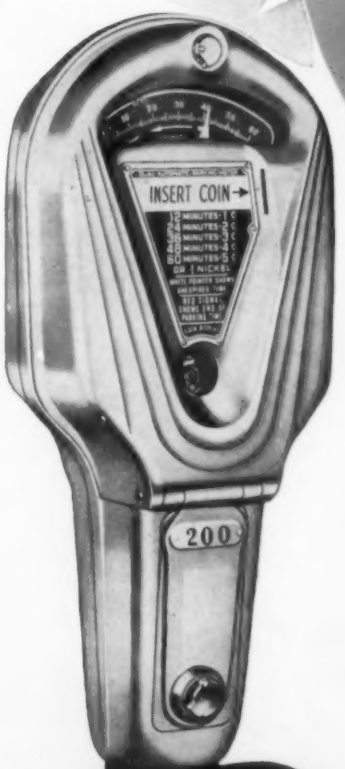

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Legal Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS
Charles S. Rhyne, General Counsel

Annexation—Village-Owned Property —Consent of Town Board in Which Land Lies

In action against county to set aside assessment on ground property was exempt from taxation, held that under village law before vacant land owned by village can be annexed to village, village need not obtain consent of members of town board on which land is situated, but consent of town board in which village is situated. *In re Village of Spring Valley*, 71 N. Y. S. (2d) 848 (N. Y. Sup. Ct., Rockland Co., March 28, 1947).

Buildings—Certificate of Occupancy —Municipal Liability for Negligent Issuance

In action for damages for negligent issuance of certificates that house occupied by plaintiffs conformed substantially to village's planning and zoning ordinance and building code and were safe for occupancy, held that village issuing certificate of occupancy does not become liable for damages because of defective construction of building. *Meadows v. Village of Mineola*, 72 N. Y. S. (2d) 368 (N. Y. Sup. Ct., Nassau Co., April 28, 1947).

Cemeteries—Tax Exemption of

In action to recover taxes paid under protest, held that doctrine of equitable conversion could not be invoked in aid of exemption from taxation of unused former cemetery land, which cemetery association had contracted to sell, by treating land as money, on ground that proceeds of sales should be exempt from taxation as destined by statute for ultimate tax-exempt use in acquisition of other lands and improvements for cemetery purposes. *Laurel Hill Cemetery Ass'n v. City and County of San Francisco*, 184 Pac. (2d) 160 (Cal. App., Sept. 3, 1947).

Cigarettes—Tax On—Statement of Emergency in Ordinance as Binding On Courts

In mandamus to compel City of Springfield to repeal cigarette tax ordinance or submit it to vote of electors, which ordinance contained emergency clause, thus putting ordinance in effect immediately rather than 30 days after passage, held that declaration by legislative body that act or ordinance is emergency measure cannot make it so, but it is for the court to determine whether it is in fact emergency measure within meaning of constitution or fundamental law authorizing it. *State ex rel. Schmill v. Carr*, 203 S. W. (2d) 670 (Mo. App., June 11, 1947). *Reh. den.* June 30, 1947.

Firemen—Illegal Suspension—Recovery of Salary

Where fire chief's notice suspending fireman did not specify duration of suspension, held that fireman was justified in regarding suspension as for indefinite time although it was effective only 30 days, and compensation for time lost after 30 days could be recovered. *Schell v. City of Aberdeen*, 183 Pac. (2d) 466 (Wash., July 10, 1947).

Hospitals—Construction—Public or Private Use

In suit against city and officials to enjoin construction of building on hospital grounds, on ground that building was for use by doctors and dentists in their private practice, held evidence sustained trial court's finding that the building was not for illegal purposes but for hospital annex only. *Hamilton v. City of Anniston*, 31 So. (2d) 715 (Ala., June 26, 1947). *Reh. den.* July 31, 1947.

Home Rule—Authority of City to Establish Extraterritorial Election and Assessment District

In action for declaratory judgment, held that provision in home-rule charter of city organized from village theretofore existing within boundaries of town, whereby city attempted to constitute town and city one election and assessment district, was invalid, notwithstanding, by general law, village had previously enjoyed status of single district in unison with town. *Almquist v. City of Biwabik*, 28 N. W. (2d) 744 (Minn., Aug. 15, 1947).

Intoxicating Liquor—License—Revocation Without Cause

In action to enjoin city from interfering with plaintiff's business under its license as wholesale liquor dealer and distributor, held that petition alleging payment of $2,000 to City of Savannah for wholesale liquor license and arbitrary revocation of such license when licensee had violated no law or regulation under ordinance, and without revoking licenses of other similar holders, set forth cause of action. *Mayor of Savannah v. Savannah Distribution Co.*, 43 S. E. (2d) 704 (Ga., July 10, 1947). *Reh. den.* July 22, 1947.

Licenses—Discrimination Against Non-Residents—Solid Fuels—Validity

In action to have declared void certain sections of ordinance of City and County of Denver, held that provision of ordinance regulating sale of solid fuels within city, requiring that no license shall be held by one not maintaining bona fide office in city, void as arbitrary, unreasonable, and denial of equal protection of laws. *Houston v. Kirschwing*, 184 Pac. (2d) 487 (Colo. Aug. 11, 1947). *Reh. den.* Sept. 8, 1947.

Notice of Claim—Extension of Time For Filing

Where public administrator, prosecuting action for negligence causing injuries and death of decedent, relied for information mainly upon investigations conducted by officials and employes of city, particularly members of police and fire departments and records in police blotter, held that 60-day statutory period for service of notice of claim extended to 30 days after entry of order for extension. *Mulligan v. City of New York*, 72 N. Y. S. (2d) 112 (N. Y. Sup. Ct., N. Y. Co., May 21, 1947).

Ordinances—Valid and Invalid Provisions—Separability

In action for mandamus to compel payment of salaries of clerks and employes provided by ordinance of city, held that where ordinance consists of several distinct and independent parts, some of which are void because in contravention of state statute, this does not affect validity of other independent provisions of ordinance. *State ex rel. v. City of St. Louis*, 204 S. W. (2d) 234 (Mo., July 31, 1947).

Pensions—Disability—Taxation By Federal Government

In action for recovery of internal revenue taxes alleged to be erroneously or illegally collected, held that money received by members of police or fire departments of District of Columbia who were retired for disability, being in the nature of compensation for injuries under workmen's compensation act, was not subject to federal income tax. *Frye v. U. S., Lay v. Same*, 72 F. Supp. 405 (U. S. D. C., D. C., June 24, 1947).

Public Utilities—Tax On—Validity

In suit to enjoin collection of tax based upon amount paid for utility services, held levy of tax on amount received for utility services coming within purview of legislative act granting special and specific authority to cities and towns to levy such tax, is not void as violative of commerce clause of Federal Constitution or of due-process clause of either state or federal constitution. *Tamiami Trail Tours v. City of Tampa*, 31 So. (2d) 468 (Fla., July 15, 1947). *Reh. den.* Aug. 1, 1947.

Radio Stations—Gross Income Tax On—Validity

In action to recover money paid for taxes to Bureau of Revenue of State of New Mexico, held that emergency school tax could lawfully be imposed on gross income of New Mexico Broadcasting Company from local advertising programs for New Mexico business without imposing unlawful burden on "interstate commerce," where listeners who were patrons of New Mexico businesses were nearly all residents of the state. *Carlsbad Broadcasting Corp. v. Bureau of Revenue*, 184 Pac. (2d) 434 (New Mex., Aug. 11, 1947). *Reh. den.* Sept. 10, 1947.

Real Estate—Power of Council to Sell When Public Use Has Ceased

Under statute authorizing sale of city property by city council whenever property in opinion of city council becomes unsuitable or has ceased to be used for public purposes, held that notice of intended sale is not required to be given either to public or individual members of city council nor was any particular price required to be obtained where no other statute or ordinance governed situation. *Ravanelle v. City of Woonsocket*, 54 Atl. (2d) 376 (R. I., Aug. 1, 1947).

Schools—Free Transportation to—Submission of Question to Voters

In action for mandatory injunction, held district school board exercises governmental authority in determining whether free transportation to and from school shall be provided, and is not estopped from refusing to provide such transportation because district electors voted for erection of school building in reliance on supposition such transportation would be provided. *Muehring v. School Dist. No. 31 of Stearns Co.*, 28 N. W. (2d) 655 (Minn., July 25, 1947).

Sidewalks—Snow and Ice On—Municipal Liability

In personal injury action resulting from fall on sidewalk covered with snow and ice, held duty to remove snow and ice rests on municipality and fact that owner of property is required by statute, ordinance and police regulation to remove snow and ice does not modify rule. *Mills v. City of New York, City of New York v. Brown*, 71 N. Y. S. (2d) 507 (N. Y. Sup. Ct., Kings Co., Apr. 5, 1947).

Veterans—Minors—Act Granting Right to Mortgage Land—Validity

In suit for decree declaring act of General Assembly of Maryland making Federal Servicemen's Readjustment Act applicable to veterans under 21 years of age to be unconstitutional, held that act permitting veterans under 21 to mortgage, buy, or execute deed for sale of real estate purchased under act was not invalid as discriminating against veterans under 21 years of age because they are not allowed to repudiate contracts made under act after they become of age. *Gebhart v. Hill*, 54 Atl. (2d) 315 (Md., July 8, 1947).

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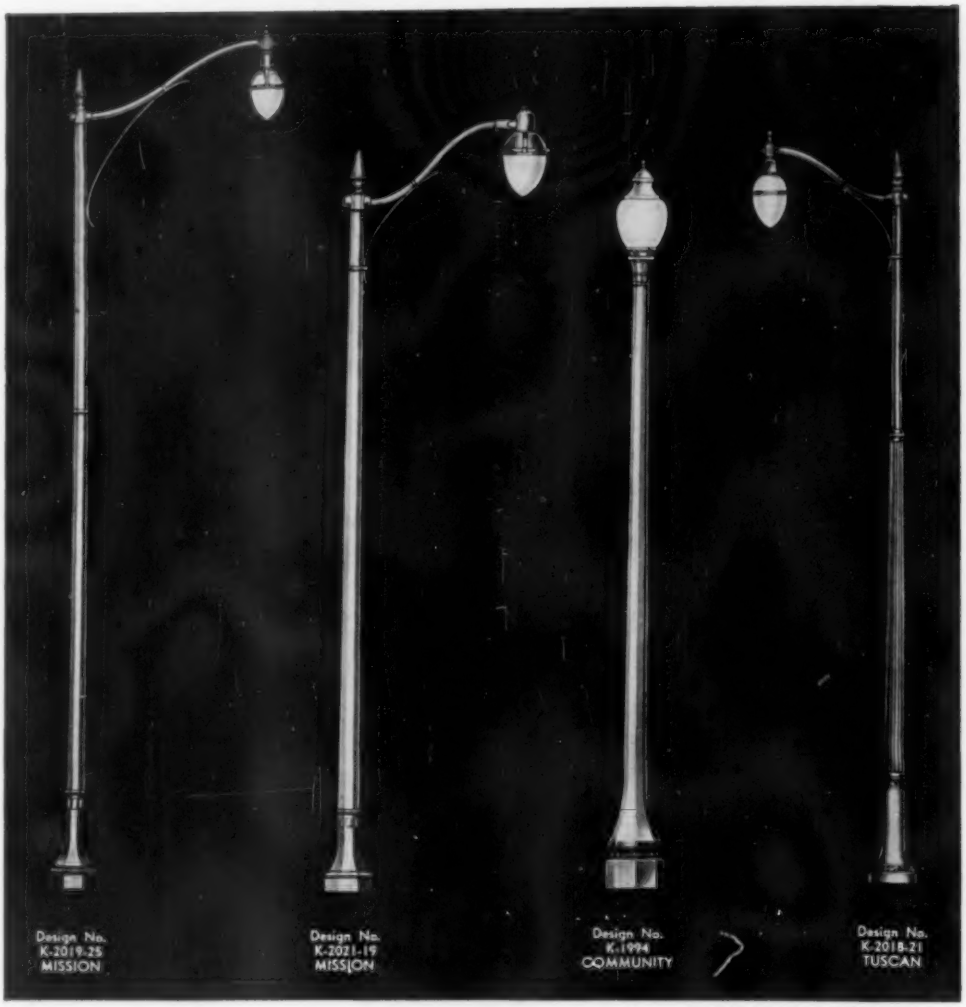

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Recent City Manager Appointments

The following portraits are of city managers whose appointments have been announced in preceding issues of *The American City*.

H. L. Levens
Ironwood, Mich.

A. J. Koenig
Milford, Conn.

P. F. Roan
Wayne, Mich.

J. A. Willman
Columbus, Ga.

G. Shaw
Avalon, Calif.

C. F. Trinkle
Tillamooke, Ore.

W. E. Hansen
Hannibal, Mo.

A. E. Fuller
Fulton, Ga.

R. Miller
Berkeley, Calif.

F. R. Buechner
Hamilton, Ohio

LLOYD ALLEN, formerly of Needham, Mass., has been appointed at Stonington, Maine.

W. G. ANDREWS has succeeded H. M. TODD as manager of Galax, Va.

JOHN C. BARKER, assistant to the manager of Norwood, Mass., has been appointed town manager of Fort Fairfield, Maine.

ROBERT E. BAUMBERGER, manager of Castleton, Vt., 1939-40; Ludlow, Vt., 1940-42; Mill Valley, Calif., 1942-47, became manager of Boulder, Colo., January 1.

WALLACE BOND succeeds WILLIAM E. JOHNSTON at McAlester, Okla.

EARL C. COALSON, former director of public works, succeeds W. J. FICKLE at Bristol, Va.

PERRY CRAWFORD has been appointed at Lake Worth, Fla.

MAXWELL DAVENPORT has been appointed at Graylin, Mich.

JAMES J. DENEEN, former engineer of Crookston, Minn., became first manager of Montevideo, Minn., January 1.

JAMES T. DEPPE has succeeded BILL RICHARDS at Phoenix, Ariz.

JOHN A. FATORA is acting manager of Blairsville, Pa., until a new council takes office this month.

K. C. FINCH of Iola, Kans., is the first manager of Anadarko, Okla.

JAMES A. GIDDINGS, manager of Wichita Falls, Texas, 1924-44; Brownville, Texas, January-September 1944, now with the U. S. Bureau of the Budget, succeeded Morgan Works at Longview, Texas, on January 1. Mr. Works retired to enter private business.

ROBERT C. HAYDEN, engineering instructor at Norwich University, has been appointed at Northfield, Vt.

CLARENCE L. HOPER, manager of Alliance, Nebr., from 1936 to January 1947; now with the U. S. Reclamation Service, has succeeded E. L. MOSLEY at Colorado Springs, Colo.

MORRIS KARP will serve as acting manager of Long Beach, N. Y.

JOHN W. LEE has succeeded WYLY KEITH at Atoka, Okla.

C. L. LONGSON has been appointed first manager of Menlo Park, Calif.

AUSTIN MOORE has succeeded WILL WHITE at Lexington, Ky.

H. A. NORMAN has been appointed acting manager of Brunswick, Ga.

CARLTON F. SHARPE, city manager of St. Petersburg, Pa., has been appointed manager of Hartford, Conn.

JOHN M. PATRIARCHE, city engineer, succeeded HARRY W. LOTT at East Lansing, Mich., on January 1.

Z. H. TESSENDORF has received the permanent appointment at Anchorage, Alaska.

CLARENCE E. RIDLEY
Executive Director
International City Managers Association
Chicago, Ill.

For a list of mayors who take office in January 1948, see page 115.

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Conventions—When and Where

Conventions listed this month for the first time are indicated by an asterisk (*)

Jan. 10-11—Chicago, Ill.
AMERICAN INSTITUTE OF PLANNERS. Annual Meeting (La Salle Hotel). Exec. Sec., Draveaux Bender, MIT, Room 7-335, 11 Massachusetts Ave., Cambridge 39, Mass.

Jan. 20—New York, N. Y.
AMERICAN WATER WORKS ASSOCIATION—New York Section. Annual Winter Meeting (Commodore Hotel). Sec.-Treas., R. K. Blanchard, 50 West 50th St., New York, N. Y.

Jan. 23-24—New York, N. Y.
NEW YORK STATE SEWAGE WORKS ASSOCIATION. Annual Meeting (Hotel Pennsylvania). Sec., Arthur T. Clark, Water and Sewage Works Manufacturers Association, Inc., 170 Broadway, New York 7, N. Y.

***Jan. 29-30—Columbus, Ohio**
LEAGUE OF OHIO MUNICIPALITIES. Annual Meeting (Deshler-Wallick Hotel). Pres., A. I. Kauffman, 14532 Lake Ave., Lakewood, Ohio.

***Feb. 5—New York, N. Y.**
AMERICAN PUBLIC WORKS ASSOCIATION, New York-New Jersey Metropolitan Chapter. Winter Meeting (New York City Sanitation Shops). Pres., Percy Sprague, Director of Public Works, Valley Stream, Long Island, N. Y.

Feb. 8-12—College Station, Texas
TEXAS WATER WORKS AND SEWERAGE SHORT SCHOOL (Texas A. & M. College). Exec. Sec., U. M. Ehlers, Director, Bureau of Sanitary Engineering, State Department of Health, Austin, Texas.

***Feb. 11—Red Bank, N. J.**
AMERICAN WATER WORKS ASSOCIATION—New Jersey Section. Winter Meeting (Molly Pitcher Hotel). Sec.-Treas., C. B. Tygert, Box 178, Newark, N. J.

Feb. 15-19—Chicago, Ill.
ASSOCIATED EQUIPMENT DISTRIBUTORS. Annual Meeting (Edgewater Beach Hotel). Exec. Sec., Frank C. Knight, 360 N. Michigan Ave., Chicago, Ill.

Feb. 16-18—New York, N. Y.
UNITED STATES CONFERENCE OF MAYORS. Annual Conference (Waldorf-Astoria Hotel). Exec. Dir., Paul V. Betters, 730 Jackson Place, Washington 6, D. C.

Feb. 24-26—Grand Rapids, Mich.
MICHIGAN HIGHWAY CONFERENCE. Annual Meeting (Pantlind Hotel). Chairman, R. L. Morrison, University of Michigan, Ann Arbor, Mich.

March 3-5—Atlantic City, N. J.
ASSOCIATION OF HIGHWAY OFFICIALS OF THE NORTH ATLANTIC STATES. Annual Meeting (Traymore Hotel). Sec.-Treas., A. Lee Grover, Secretary State Highway Dept., Trenton, N. J.

***March 10-12—Trenton, N. J.**
NEW JERSEY SEWAGE WORKS ASSOCIATION. Annual Meeting (Stacy-Trent Hotel). Sec.-Treas., M. S. Kachorsky, Box 283, Manville, N. J.

March 11-13—New Orleans, La.
AMERICAN CONCRETE PIPE ASSOCIATION. Annual Meeting (The Roosevelt). Mgr. Dir., Howard F. Peckworth, 228 N. LaSalle St., Chicago, Ill.

***March 12-14—Washington, D. C.**
AMERICAN SOCIETY FOR PUBLIC ADMINISTRATION. Annual Conference (Statler Hotel). Sec.-Treas., Hazel Jackson, 1313 East 60th St., Chicago 37, Ill.

***March 16-18—Grand Rapids, Mich.**
CONFERENCE ON HIGHWAY ENGINEERING. Annual Conference (Pantlind Hotel). Sec., R. L. Morrison, University of Michigan, Ann Arbor, Mich.

April 1-2—Syracuse, N. Y.
AMERICAN WATER WORKS ASSOCIATION—New York Section. Spring Meeting (Hotel Syracuse). Sec.-Treas., R. K. Blanchard, 50 W. 50th St., New York, N. Y.

April 7-9—Chicago, Ill.
MIDWEST POWER CONFERENCE. Annual Meeting (Sheraton Hotel). Sec., E. R. Whitehead, Illinois Institute of Technology, 3300 Federal St., Chicago 16, Ill.

April 8—Livingston, Mont.
MONTANA SEWAGE WORKS ASSOCIATION. Annual Meeting (City Auditorium). Exec. Sec., H. B. Foote, Division of Sanitary Engineering, Helena, Mont.

***April 12-14—Fayetteville, Ark.**
ARKANSAS WATER AND SEWAGE CONFERENCE. Annual Conference (University of Arkansas). Sec., Harrison Hale, 118 Chemistry Building, Fayetteville, Ark.

April 14-17—Atlantic City, N. J.
COMMUNITY CHESTS AND COUNCILS, INC. Annual Meeting (Ambassador Hotel). Exec. Dir., Ralph Blanchard, 155 E. 44th St., New York 17, N. Y.

***April 21-23—Lafayette, Ind.**
AMERICAN WATER WORKS ASSOCIATION—Indiana Section. Annual Meeting (Purdue University, Union Building). Sec.-Treas., Charles H. Bechert, Room 200, Underwriters' Building, Indianapolis, Ind.

April 28-30—St. Louis, Mo.
MISSOURI ASSOCIATION OF PUBLIC UTILITIES. Annual Meeting (Hotel Jefferson). General Counsel, William H. Allen, Merchants Bank Bldg., 101 West High St., Jefferson City, Mo.

***May 3-5—Pittsburgh, Pa.**
AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS. Annual Meeting (Hotel Roosevelt). Sec., Bradford Williams, 9 Park St., Boston 8, Mass.

May 3-7—Atlantic City, N. J.
AMERICAN WATER WORKS ASSOCIATION. Annual Meeting (Convention Hall). Sec., Harry E. Jordan, 500 Fifth Ave., New York, N.Y.

***May 10-13—Washington, D. C.**
NATIONAL FIRE PROTECTION ASSOCIATION. Annual Meeting (Statler Hotel). Gen. Mgr., Percy Bugbee, 60 Batterymarch St., Boston, Mass.

***May 12—Marlborough, Mass.**
NEW ENGLAND SEWAGE WORKS ASSOCIATION. Spring Meeting (Marlborough Country Club). Sec.-Treas., Walter E. Merrill, 511a State House, Boston, Mass.

***May 17-19—Colorado Springs, Colo.**
AMERICAN PUBLIC POWER ASSOCIATION. Annual Convention (Broadmoor). Gen. Mgr., Carlton L. Nau, 1129 Vermont Ave., NW., Washington 5, D. C.

May 17-19—Newark, N. J.
AMERICAN PLANNING AND CIVIC ASSOCIATION. Annual Meeting (Essex House). Exec. Sec., Harlean James, 901 Union Trust Bldg., Washington 5, D. C.

***May 20-21—Spokane, Wash.**
ASSOCIATION OF WASHINGTON CITIES. Annual Meeting (Davenport). Exec. Sec., Chester Biesen, Smith Hall, University of Washington, Seattle 5, Wash.

***June 7-10—Denver, Colo.**
MUNICIPAL FINANCE OFFICERS ASSOCIATION OF THE UNITED STATES AND CANADA. Annual Meeting (Cosmopolitan Hotel). Exec. Dir., Miner B. Phillipps, 1313 East 60th St., Chicago 37, Ill.

***June 10-12—Denver, Colo.**
COLORADO MUNICIPAL LEAGUE. Annual Meeting (Shirley-Savoy Hotel). Exec. Sec., Allen E. Pritchard, Jr., 327 Norlin Library, Boulder Colo.

***June 14-16—Faribault, Minn.**
LEAGUE OF MINNESOTA MUNICIPALITIES. Annual Meeting. Exec. Sec., C. C. Ludwig, 15 University of Minnesota Library, Minneapolis 14, Minn.

***June 16-18—New York, N. Y.**
NEW YORK STATE CONFERENCE OF MAYORS AND OTHER MUNICIPAL OFFICIALS. Annual Meeting (Commodore Hotel). Exec. Sec., Morgan Strong, 6 Elk St., Albany 7, N. Y.

***June 18-19—Milwaukee, Wis.**
CENTRAL STATES SEWAGE WORKS ASSOCIATION. Annual Meeting (Schroeder Hotel). Sec.-Treas., Paul W. Reed, 1098 W. Michigan St., Indianapolis, Ind.

***June 20-26—Zurich, Switzerland**
INTERNATIONAL CONGRESS FOR HOUSING AND TOWN PLANNING (Das Kongresshaus). Acting Sec. Gen., Morris H. Hirsh, International Federation for Housing and Town Planning, 13 Suffolk St., Haymarket, London, S.W. 1, England.

***June 21-28—Erie, Pa.**
PENNSYLVANIA STATE ASSOCIATION OF BOROUGHS. Annual Meeting (Boat Trip). Sec., H. F. Alderfer, The Capitol, Harrisburg, Pa.

June 21-25—Salt Lake City, Utah
THE AMERICAN INSTITUTE OF ARCHITECTS. Annual Convention (Hotel Utah). Exec. Dir., Edward C. Kemper, 1741 New York Ave., NW., Washington 6, D. C.

July 16-24—Chicago, Ill.
AMERICAN ROAD BUILDERS ASSOCIATION. Road Show, Soldier Field. Engr. Dir., Charles M. Upham, 1319 F St., NW., Washington 4, D. C.

Sept. 14-15—Manitoba, Canada
AMERICAN WATER WORKS ASSOCIATION—Minnesota Section. Annual Conference (Royal Alexandra Hotel). Sec.-Treas., R. M. Finch, 416 Flour Exchange, Minneapolis 15, Minn.

***Oct. 10-14—New York, N. Y.**
INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE. Annual Conference (Hotel Pennsylvania). Exec. Sec., Edward J. Kelly, 918 F St., NW., Washington, D. C.

***Oct. 11-13—New York, N. Y.**
AMERICAN SOCIETY OF PLANNING OFFICIALS. Annual Meeting (Hotel New Yorker). Exec. Dir., Walter H. Blucher, 1313 E. 60th St., Chicago 37, Ill.

The Municipal Bond Market

Some sales of new issues reported in December numbers of *The Bond Buyer*:

Amount	*Borrower and Purpose*	*Rate (%)*	*Term (Years)*	*Basis (%)*
$ 506,148	Marion County, Ind., Voting Machine	1.50	6.25 Avg.	1.411
35,000	Scottsbluff, Nebr., Garbage Disposal	1.75	5-10 Opt.	1.45
48,000	Bradley Beach, N. J., Beach Protection of 1947	2	5.50 Avg.	1.957
127,000	Rugby, N. D., Sewage Disposal	2.10	8 Avg.	2.095
250,000	Greenwood, Miss., Electric	2.125	1-10 Ser.	2.088
250,000	Owensboro, Ky., Municipal Airport	2.25	7.83 Avg.	1.905
35,000	Atkinson, N. H., School District	2.50	9.25 Avg.	2.109
123,000	St. Louis Park, Minn., Water Main Certificates of Indebtedness	2.75	7.33 Avg.	2.689
1,500,000	Tallahassee, Fla., Municipal Hospital Building Certificates, Series of 1947	3	10.5/11.83 O.-A.	3.159
25,000	Elida, Ohio, Water Works	3.25	2-26 Ser.	3.155

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Municipal and Civic Publications

Recreational Planning Guide

A Guide for Planning Facilities for Athletics, Recreation, Physical and Health Education—*By participants in National Facilities Conference. The Athletic Institute, 209 S. State St., Chicago 48, Ill.* 1947. 127 *pp.* $1.50.

Representing the best thinking of fourteen national agencies and fifty-four outstanding individuals from all parts of the country who gathered together for a two weeks' working conference to produce the material, the *Guide* and its standards and principles should have a real influence on future planning for community facilities. It is published primarily as an aid to school superintendents, their boards, park and recreation administrators and supervisors, architects, engineers, city planners, as well as civic leaders interested in functional planning of modern facilities for athletics, recreation, physical and health education.

The *Guide* stresses the importance of cooperative planning between various community agencies and officials. A glance at some of the *Guide's* recommended facilities will show why this cooperative planning is considered so important. For example, the *Guide* proposes 40 acres as the land area needed to serve a senior high school of 1,000 pupils and its community; for a junior high school of 750 pupils, 25 acres is said to be required, and for an elementary school of 350 to 1,000 pupils, 10 acres is suggested. The figures given include the space occupied by the building and the outdoor facilities to serve the recreation needs of the neighborhood and community areas in which the schools are located.

There are chapters in the *Guide* on specific aspects of planning for both indoor and outdoor recreational and health facilities. There are separate chapters also on swimming pools, stadium and field houses, and general building features.

Regional Plan Conference

Communities in Conference—*Henry Davis Nadig, Editor. Report of the Second Regional Plan Conference on Community Planning, October 9, 1947. Regional Plan Association, Inc., 205 E. 42nd St., New York 17, N. Y. 28 pp.* $1.00.

Four major panel discussions on "Putting Planning Into Practice," "Private Flying in the New York Region," "Problems of New Suburban Development," and "How a Local Airport Affects Your Community" are reported in the proceedings of this conference, attended by 248 representatives from 97 communities in the New Jersey-New York-Connecticut metropolitan area. Speeches given during a luncheon session on "The New York Metropolitan Region's Developing Airline Airport System" are also included.

The conference was sponsored by the Regional Committee of the Regional Plan Association, whose members come from communities of the fast growing fringe of outlying suburban areas of the metropolitan region. The "town meeting" type discussions provided an excellent opportunity for the exchange of ideas and experience on solving planning problems among municipal officials.

Local Chamber Survey

1947 Survey of Local Chambers of Commerce—*Commercial Organization Department, Chamber of Commerce of the United States, Washington 6, D. C. 38 pp.*

This survey presents information in tabular form about virtually every phase of organization and operation of local chambers of commerce, based on responses to a questionnaire form from 740 chambers. All chambers have been classified according to the population of their cities, and the material is presented in the same order throughout the entire report, simplifying study and comparison.

Swimming Pool Manual

Operating Manual for Swimming Pools—*By R. N. Perkins, Sr., The Refinite Corporation, Omaha, Nebr. 104 pages.* $1.00.

This is the fifth edition since 1921 of R. N. Perkins' *Operating Manual for Swimming Pools.* It opens with a description of distribution layout systems to obtain complete recirculation of water and the elimination of dead spots. It describes in detail types of chlorine feeders and coagulation feeders. Special stress is given to vacuum cleaning of pools by all the approved methods.

A chapter is devoted to the various chemicals used in treating swimming-pool water, and their methods of application. Because of the recent shortage of chlorine, substitutes have been worked out and the results of their use discussed. Another chapter discusses the sterilization of water, and the various sterilizing agents. Tables are given for their proper feeding. The testing of swimming pool water is discussed and interpretations of the tests are given.

The algae problem is considered in detail, with illustrations of the organisms and the methods of killing them. The manual also explains the necessity of recognizing the various types in order to use the proper material and dose to remove them. Another chapter is devoted to insects, always a pool problem, and methods for their control.

Sediment removal from the swimming pool is the subject of the final chapter of this book, with the results of the author's 30 years' experience in swimming pools condensed into an understandable, workable procedure.

The bulletin is well illustrated with pictures showing the maintenance equipment in operation. It also has drawings showing procedural operations, and diagrams illustrating the action of the pavement that leads to the need for maintenance.

Airport Runway Maintenance

Maintenance of Concrete Runways, Taxiways, and Aprons—*By W. K. Macatee, Manager, Airport Division, American Road Builders Association, 1319 F St., NW., Washington 4, D. C. 30 pp. 50 cents.*

This is one of a series of bulletins prepared by this organization covering maintenance problems for airport managers. It gives a brief discussion covering the theoretical aspects involved in the damage to concrete pavements. This is followed with practical, easily applied recommendations for repair methods for concrete pavements. These methods include crack sealing, including materials and equipment, filling voids in subgrades by various mud-jack methods, replacing broken slab areas and placing concrete patches, correcting spalled areas either by cement mortor or by bituminous patching, and general resurfacing.

Treating Petroleum Wastes

Industrial Waste Disposal for Petroleum Refineries and Allied Plants—*By W. B. Hart. Petroleum Processing, 1213 W. Third St., Cleveland 12, Ohio.* 1947. 102 *pp.*, $4.00.

This is an addition to the literature on industrial waste disposal, devoted specifically to petroleum problems. It draws from a series of 20 articles that the author prepared originally for *Petroleum Processing* that ran from January 1946 through September 1947. It analyzes the economical and legislative aspects of this particular waste treatment problem. It classifies the kinds of wastes and discusses the effects that industrial wastes have on stream pollution. It lists the preliminary investigations that should be conducted and tells of the treatments that oil-containing wastes should have.

Businessmens' Conference On Urban Problems

Your City Is Your Business—*A Complete Report on the Businessmen's Conference on Urban Problems, Sept. 11 to 12, 1947. Chamber of Commerce of the United States, Washington 6, D. C. 223 pp.* $1.00 *per copy; special prices for quantity orders.*

Attended by more than 500 business leaders from all parts of the country, the Businessmen's Conference on Urban Problems demonstrated a keen awareness of and interest in city planning and development. Panel discussion, led by leaders in the field, was devoted to the following subjects: Relations of City Planning to Community Development, Traffic Congestion, Off-Street Parking, and Rebuilding Blighted Areas. Questions asked at the various panels are published in full together with the answers given by the panel members.

Excerpts from the keynote speech of the conference, "The Businessmen's Stake in Community Development," by Earl O. Shreve, president of the National Chamber of Commerce, were published in The American City for October 1947, p. 111. Time has demonstrated that without the support of major influential groups in the community, such as those of business and industry, city improvement plans have little hope of being carried out under present political circumstances. This conference and the report of its proceedings should help to re-emphasize the importance of current municipal difficulties to these groups. Municipal officials may then get increased cooperation for their plans and programs.

Outdoor Advertising Control

Regulation and Control of Outdoor Advertising—*Bureau of Governmental Research and Services, University of Washington, Seattle, Wash., in cooperation with Association of Washington Cities. Bureau Report No. 76. September 1947. 78 pp.*

An excellent research study that outlines the constitutional bases for and legal limitations upon the regulation of outdoor advertising and also analyzes the principal types of regulations that have been employed by the various levels of government.

Specific county and municipal ordinances relating to outdoor advertising are included in the report, as well as several model ordinances that have been drawn up in states other than Washington. One of the appendices indicates trends with respect to state legislation in the field of outdoor advertising. A list of primary and secondary sources of information about the regulation and control of outdoor advertising should also prove especially helpful.

Charter Commission Guide

A Guide for Charter Commissions—*National Municipal League, 299 Broadway, New York 7, N. Y. 1947. 34 pp. 50 cents.*

The *Guide* provides the results of accumulated experience on how the unusual job of preparing a city charter should be undertaken. Material is included on how a charter commission should be organized and financed, how a charter draft should be released and publicized, and an outline is included of some of the principles of charter making, such as methods of assuring popular control, objective and scope of the charter, etc.

The final draft already has been used in manuscript form by about 20 charter commissions. The *Guide* is intended as a companion piece to the *Model City Charter*, another publication of the National Municipal League, which reflects the advice of leading charter experts about what a good charter should contain.

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A Foundation History

RUSSELL SAGE FOUNDATION, 1907-1946—*By John M. Glenn, Lilian Brandt, and F. Emerson Andrews. A History in Two Volumes. Russell Sage Foundation, New York, N. Y.* 1947. 746 *pp.* $5.00.

Researchers and others interested in tracing the origins of planning, housing, and other municipal betterment movements will find this history a valuable source of information. The Foundation, since its inception in 1907, has spent $21,000,000 for a host of worthy causes, including the support of recreation, social work, industrial housing and planning studies and publications. One of its major contributions to the planning field was the sponsorship of the New York Regional Plan, which involved an outlay of more than $1,500,000 in 14 years.

Liverpool Plans

CITY OF LIVERPOOL, TOWN PLANNING EXHIBITION, 1947 *and* REPORT ON SPEKE, A SELF-CONTAINED AND PROTECTED COMMUNITY UNIT—*Two reports on planning in Liverpool, available from the Municipal Information Office, Town Clerk's Department, Municipal Buildings, Liverpool* 3, *Great Britain. 50 cents each, including postage.*

Both reports are examples of the excellent municipal informational and public relations programs conducted in Great Britain. The illustrated brochure on the town planning exhibition conducted from June 30 to July 26 is designed to continue the stimulus of public interest raised in the exhibit. Widely different aspects of the planning problem were presented, including the redevelopment of the central commercial area of the city, the creation of Speke, a new residential community, and the planning of a new trading estate. The extensive use of models was featured. A folding map is included at the back of the brochure showing the basic plan for the city, approved by the City Council.

The attractive report on Speke, which is to be a self-contained and protected community unit of over 22,000 persons near Liverpool, traces the city's interest in the project and proposes methods for its development and construction by a local authority corporation.

Metropolitan Planning

PLANNING THE METROPOLITAN DISTRICT, REPORT ON "METROPOLITAN PLANNING"—*By John E. Vance. Prepared for the Civic Planning and Traffic Board, Providence Chamber of Commerce. Mimeo.* 1947. [illegible] *pp., plus* 19-*p. appendix.*

A clarifying discussion of the origin, scope, and function of metropolitan planning which concludes by pointing out that "planning" and "planning education" are handicapped by a lack of simple definitions and accepted terminology. The report identifies conditions or situations under which metropolitan planning has functioned, and includes answers to a questionnaire on definitions of "city," "metropolitan," and "regional planning" by a number of leading authorities in the planning field.

Public Administration Letters

LETTERS OF PUBLIC ADMINISTRATION, FROM A DEAN TO HIS GRADUATES—*By Lent D. Upson, National Training School for Public Service, 451 Kirby Ave., W., Detroit* 2, *Mich.* 1947. 95 *pp.* $1.00.

One of the most compact, instructive, and entertaining publications that have been issued about the public administration field. Lent D. Upson is Dean of the School of Public Affairs and Social Work of Wayne University and the booklet represents the results of advice and talks to graduate students of public administration. The present work is the third revised edition.

The contents are so distilled and cogent that any professional public administrator will gain from reading its practical comments about "down to earth" aspects of the administrative field. The four chapters, or letters, have the following titles: "Being an Executive," "Tools of Administration," "Heuristics" and "Statistical Theory in One Easy Lesson."

The Use of Authorities

"AUTHORITIES" AND HOW TO USE THEM—*By Luther Gulick, Institute of Public Administration. November* 1947 *issue of "The Tax Review," published by the Tax Foundation,* 30 *Rockefeller Plaza, New York, N. Y.* 6 *pp.*

Here is a much needed brief penetrating discussion of authorities, what they are, what they are good for, how they should be applied, their politics, the dangers involved in and the antidote suggested for their use.

Dr. Gulick points out that, despite their many advantages, authorities should be subjected to some degree of democratic control and policy coordination. He declares that creation of an authority should be the last resort, not the first bright idea. He states that continued vigorous attention to the problem of modernizing political boundaries will be an aid in rendering independent authorities less necessary. In the meantime, he concludes, we may expect the authority to be the chief vehicle of cooperative regional *planning and action*, particularly with reference to transportation, power, and metropolitan development—problems which must be solved but which cannot be handled by traditional governments because of their territorial and fiscal straitjackets.

Analysis of Annual Reports

ANNUAL REPORTS—*In "New Hampshire Town and City Notes,"* Vol. I, No. 1, November 1947. *Bureau of Government Research, University of New Hampshire, Durham, N. H.* 4 *pp.*

The first issue of this four-page publication is devoted to a discussion of annual reports by Donald E. Dunn, executive secretary of the Bureau. It points out that reports cannot be considered to be informative unless they are made readable and interesting. The organization of many current New Hampshire town reports is criticized, and suggestion are made for their improvement.

Guide for Discussion Leaders

IT PAYS TO TALK IT OVER—*National Institute of Social Relations, Inc., 1244 Twentieth St., N.W., Washington* 6, *D.C.* 1947. 48 *pp.* 40 *cents. Special prices for quantity orders.*

This useful handbook contains notes and suggestions for group discussion leaders on the principles and methodology of organizing discussions so that they will be of maximum benefit. The volume, itself a good example of teamwork—of "talk it over" come to fruition—reflects the group thinking and experiences of the staff of the National Institute of Social Relations in the conduct of its experimental training and discussion programs.

The Institute's materials and "Talk It Over" discussion guides on specific topics are available on a non-profit basis for the use of community and civic organizations.

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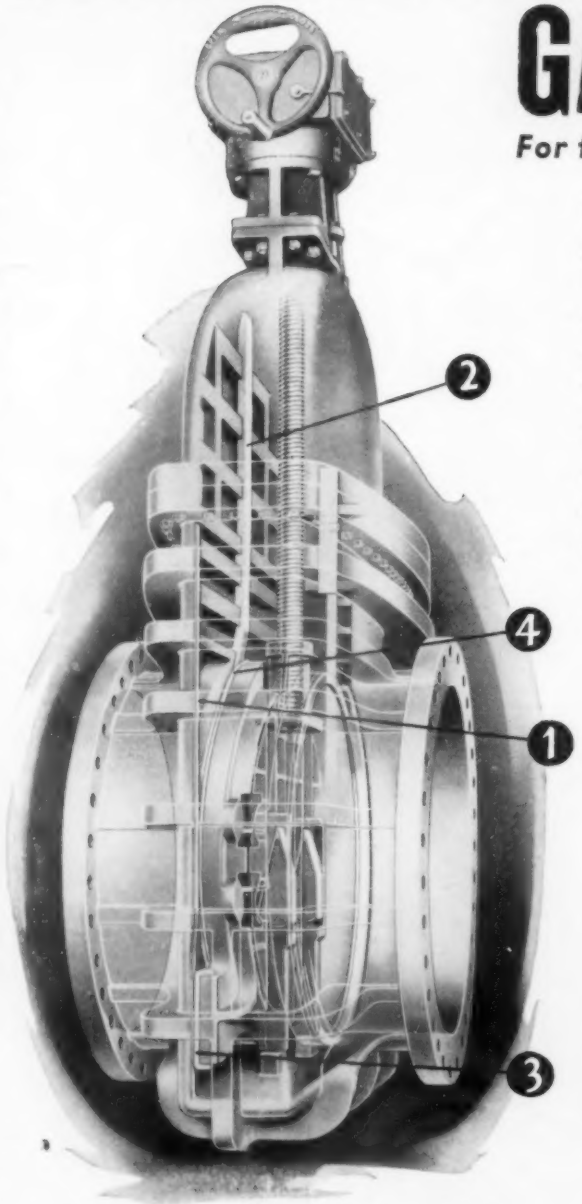

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MPR Guide

MUNICIPAL PUBLIC RELATIONS SHORT COURSE—*Prepared by the Institute of Local and State Government, University of Pennsylvania, 3437 Woodland Ave., Philadelphia 4, Pa.* 1947. 32 *pp.* $1.00.

Eight four-page leaflets issued during the course are contained in this folder. Topics covered are: "Nature of Public Relations," "Employe-Citizen Contacts," "Governmental Procedures," "Physical Appearances," "Training Employes in Public Relations," "Publicity and Press Relations," "Municipal Reports," and "Citizen Participation." *

The well-illustrated and well-presented leaflets contain many practical ideas, techniques, and suggestions for specific ways that commissioners, councilmen, managers, secretaries, and department heads can improve their public relations programs.

* See "The City Tells Its Story," p. 92, for further information about the course.

N. Y. Municipal Problems

MUNICIPAL PROBLEMS, 1947—*Proceedings of the Thirty-eighth Annual Meeting of the Conference of Mayors and Other Municipal Officials of the State of New York. Available from the Conference office, 6 Elk St., Albany 7. June* 1947. 136 *pp.* $1.50.

This annual volume contains all addresses and papers presented at the annual meeting of the New York Conference of Mayors and other Municipal Officials in Buffalo, June 18 to 20. There are excellent discussions of state-local fiscal relations and the legislative program needed by the cities and villages to acquire a greater degree of financial stability. Despite the operation of the Moore plan, finances remain the basic plague of most New York municipalities.

Other thoughtful presentations include those on traffic and parking; aviation; securing new industries, and housing, planning and zoning. Municipal leagues and organizations in other states will get many ideas in these proceedings that can be adapted to their own programs and activities.

Philanthropy Guide

GIVER'S GUIDE TO NATIONAL PHILANTHROPY—*National Information Bureau, Inc., 205 E. 42nd St., New York 17, N. Y.* 1947. 23 *pp.*

This pocket-sized volume is intended as a guide to a number of philanthropic organizations, national and international, which meet the standards of the National Information Bureau, Inc., a non-profit corporation whose aims are to maintain sound standards in philanthropy and to provide contributors with information and advice on philanthropic organizations.

The booklet points out that philanthropy has now achieved the rank of one of the big ten industries in the country, with annual giving estimated at from two to three billion dollars. A list of eleven basic standards in philanthropy are included, as well as brief descriptions of the work, programs, and expenditures of the major national organizations that meet the Bureau's standards. The list contains the names of several groups that furnish services to municipalities.

Peddler Regulation

REGULATION OF PEDDLERS—*Bureau of Governmental Research and Services, University of Washington, Seattle 5, in cooperation with Association of Washington Cities. Report No. 78.* 1947. 55 *pp.*

The report presents a discussion of the problems of peddler regulation, citing various judicial decisions, and setting forth some requisites of a valid peddling ordinance.

Appendix "A" contains a listing of Washington laws pertaining to peddling, and Appendix "B" contains sample peddling ordinances of Washington cities and for several other areas. The model ordinance of the National Institute of Municipal Law Officers is also included.

Tax Coordination

THE COORDINATION OF FEDERAL, STATE, AND LOCAL TAXATION—*Report of the Joint Committee of the American Bar Association, the National Tax Association, and the National Association of Tax Administrators. P. O. Box 1799, Sacramento 8, Calif.* 1947. 103 *pp.* $1.50.

An excellent discussion of the problems of coordinating the tax programs of the various levels of government. In some respects the present report follows up the 1943 recommendations of the Treasury Committee on Intergovernmental Fiscal Relations in the United States.

The point of view of the booklet is that too much responsibility for tax coordination should not be placed upon the Federal Government, and that state and local governments should have a greater say in this matter. It is recommended that the administrative and legislative branches of our governments should delegate to fully competent personnel the duty to cooperate more effectively in tax administration and tax legislation with other governments. That there was considerable difference of opinion on some of the statements and principles set forth is evident by the number of dissents that were recorded by individual committee members. On the whole, however, the report will be found a good statement of the major problems involved.

Local Statistics in Useful Form

LATEST FINANCIAL STATISTICS OF NEW JERSEY MUNICIPALITIES—*Compiled by New Jersey Taxpayers Association, 414-17 Broad St. Bank Bldg., Trenton 8, N. J. September* 1947. 30 *pp.* $1.00.

Compiled from official records, this handy-sized report shows figures relating to the budgets and expenditures of 565 local-government units in New Jersey, arranged by counties. The useful tables compare the local financial statistics for the years 1938, 1946, and 1947.

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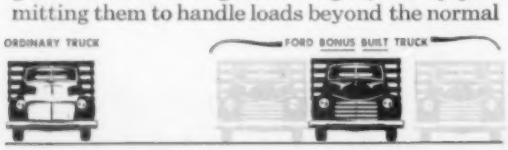
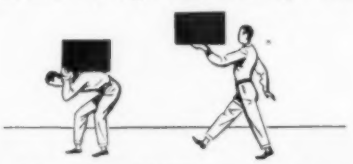
First, these Bonus Built WORK RESERVES give Ford Trucks a greater *range of use* by permitting them to handle loads beyond the normal call of duty. Ford Trucks are not limited to doing one single, specific job!

Second, these same WORK RESERVES allow Ford Trucks to relax on the job . . . to do their jobs with less strain and less wear. Thus, Ford Trucks last *longer* because they work *easier!*



Not ONE Capacity . . . but real RANGE when needed!



The load is carried EASIER by the stronger man!

Remember, every Ford Truck for '48 is Bonus Built for longer life, wider use. Keep in touch with your Ford Dealer . . . plan to see these new Ford Bonus Built Trucks for '48 as soon as announced. Don't settle for less—get the only truck that's Bonus Built! It's Ford!

***BONUS:** *"Something given in addition to what is usual or strictly due."—Webster's Dictionary.*

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LIFE INSURANCE EXPERTS PROVE . . . FORD TRUCKS LAST UP TO 19.6% LONGER!

Billboard Zoning

BILLBOARDS AND ZONING—*by Arthur H. Thompson. The State Planning Board, Department of Commerce, Commonwealth of Pennsylvania.* Mimeo. 19 *pp.*

The purpose of the paper is to investigate the political, economic, and legal problems involved in the attempt of state legislatures to control or prohibit the use of state highways for advertising purposes. The paper is general in nature, but special attention has been paid to Pennsylvania law.

The author declares that although local zoning has been successful in some areas, it has generally failed to provide complete protection because it is often beneficial to those who control local politics that highways not be zoned. The only way that a complete and uniform system of zoning can be obtained on state highways, the author concludes, is on a state-wide basis. Since it is a state-wide problem, this would appear to be the more practical solution.

Canadian Housing and Planning

HOUSING AND COMMUNITY PLANNING IN CANADA —*"Public Affairs," A Canadian Quarterly, October 1947 issue. The Imperial Publishing Company, Limited, P. O. Box 459, Halifax. Subscription, $1 annually. Single copies, 30 cents.*

Published by the Institute of Public Affairs, Dalhousie University, this issue of the quarterly brings together articles by a variety of contributors who deal with the economic, social, and cultural implications of the subject.

The issue opens with a number of articles examining the nature and extent of the housing shortage and reviewing post-war developments in the field. Then follows a discussion of the means which are being used to alleviate the situation by improved methods of construction, by more efficient financing, by new forms of organization, and by mobilizing self-help. The close relations between housing and community planning are stressed in further articles and in conclusion, the experience of Great Britain and the United States is reported.

Blight and Taxes

BLIGHT AND TAXES—*San Francisco Planning and Housing Association, 1095 Market St., San Francisco 3, Calif.* 1947. 16 *pp.*

This report contrasts conditions in two specific San Francisco neighborhoods of about equal population, the Marina district and the Geary-Fillmore district, in an effort to determine the cost of slums to the city as a whole. Comparisons are made of revenues and expenditures for each district, and tables show the relationship of costs and population to such department services as fire, juvenile court, police, public health, and public welfare.

Although the study makes the point that human misery cannot be measured by dollar signs, it shows that the cost of services to the Geary-Fillmore slum district is twelve times as much as the cost of the same services in clean and bright Marina. Taxes paid by people living in the Marina district are used to pay for the troubles of the people in the slum area. The report calls for immediate action on urban redevelopment as a key remedy for the situation.

Holland Rebuilds

HOLLAND'S RECONSTRUCTION IN FACTS AND FIGURES—*The Information Service, Ministry of Reconstruction and Housing, The Hague, Holland.* 1947, 47 *pp.*

An inspiring account of the rebuilding of Holland and its future housing and reconstruction schemes. An astonishing amount of work has already been accomplished in restoring harbors, building bridges, houses, and industries, and reclaiming the one-tenth of available land that was under water. With transportation, communication, and agricultural facilities largely restored, priority is now being given to house-building.

Sections on town planning and the financing of home building will be found of interest to officials and planners in this country.

Community Industrial Development

PARTNERS, INDUSTRY AND THE TENNESSEE COMMUNITY—*Tennessee State Planning Commission, 432 Sixth Ave. North, Nashville 3, Tenn. Publication No. 181. October 1947. 44 pp. $1.*

The industrial development procedures described in this manual are intended for the guidance of smaller Tennessee communities, but local officials in other states also will find the material applicable.

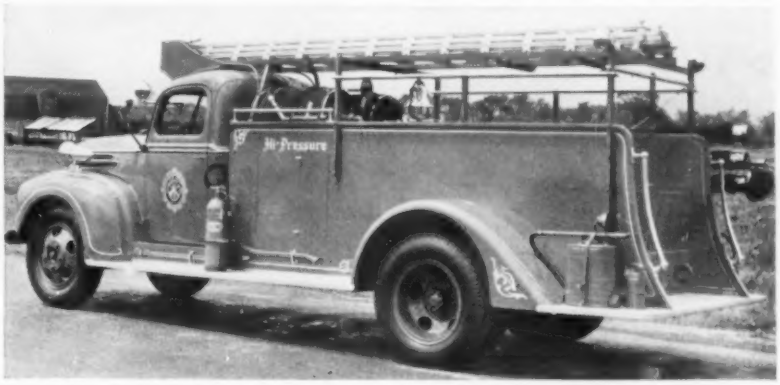
Development is a selling job, the booklet states, pointing out that a community must first be attractive as a place to live if industry's attention is to be invited. The booklet describes the various surveys which should be made of a community's resources and people, and offers suggestions for organizing and publicizing an industrial program. Sample survey forms are included in the appendix as well as lists of sources of technical assistance to Tennessee municipalities.

Grants-in-Aid

FEDERAL AND STATE GRANTS-IN-AID, ANNOTATED LAWS WITH SPECIAL REFERENCE TO MASSACHUSETTS—*Prepared by Hans F. Abraham and Priscilla M. Greeley, Bureau for Research in Municipal Government, Harvard Graduate School of Public Administration. June 1947. 121pp.*

This reference study consists of a compilation of legal extracts regarding federal and state grants-in-aid. The term "grant-in-aid" is defined as including all payments by the Federal Government to the states, or by the Commonwealth of Massachusetts to municipalities, irrespective of whether the payments are made in advance or as reimbursement for expenses already incurred.

The study serves again to illustrate the complexity of intergovernmental relationships, especially in such varied fields as conservation, education, welfare, health, employment security, public works, housing, and military aids.



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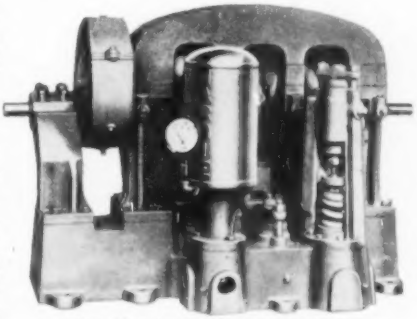
● More and more is recognized the fact that Fog Fire Fighters bring quick, positive fire control and a new measure of security to isolated communities. The quick mobility, positive performance and economy of Fog Fire Fighters make such equipment a "must" today in metropolitan fire departments.

Hardie High Pressure Pumps are readily assembled into any truck design. They give unfailing high pressure and a long life of trouble-free performance. When you buy a Fog Fire Fighter specify a Hardie Pump and Hardie Fog Gun. Any equipment manufacturer will glady supply them. Write for data.



● *This Hardie Imperial LCXA Pump delivers 60 G. P. M. at 800 P. S. I. The smaller Hardie XCXX Pump delivers 30 G.P.M. at 800 P.S.I.*

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Other Reports Received

BERKELEY, CALIF.—County Government Organization in California. By John C. Bollens, Patricia W. Langdell, and Robert W. Binkley, Jr. Bureau of Public Administration, University of California. Rev. ed. Tables. Mimeo. 44 pp. $1.00.

BOSTON, MASS.—Airport Program. Worcester County Region. The Commonwealth of Massachusetts, State Planning Board, 11 Beacon St. 1947. Mimeo. Maps. 38 pp.
—Report on a Union Motor Truck Terminal for Boston. The City Planning Board, 43 City Hall. 1947. 44 pp.

CHATTANOOGA, TENN.—Auditor's Report. 1947. Roy D. Hazlett and Associates, Public Accountants and Auditors, 715 Hamilton Bank Bldg. 149 pp.

EUGENE, ORE.—Municipal Water and Electric Utilities. History. 1946. Annual Report. Data Book. Illus. Charts. 64 pp.

FORT LAUDERDALE, FLA.—Audit Report. 1947. Mimeo. Tables. Charts.

HARTFORD, CONN.—Revised Charter of the City of Hartford. 1947. 136 pp.

HUNTINGTON PARK, CALIF.—Annual Report. 1947. Compiled by William P. Mahood, City Clerk. Illus. Charts. 36 pp.

PASADENA, CALIF.—Annual Report. 1946-47. Pasadena Water Department Report of the Chief Engineer and General Manager. Tables. Charts. 68 pp.

RICHMOND, VA.—License Taxes on Motor Vehicles in Virginia Cities and Towns. 1947. League of Virginia Municipalities, 902 Travelers Bldg. Mimeo. 10 pp. 50 cents.
—Suggested 5-Year Capital Budget. 1947. A communication from the Mayor to the Members of the City Council. Illus. Mimeo. 21 pp.

ROCHESTER, N. Y.—Hints on the Culture of Chrysanthemums. The Rochester Park Bureau and the Division of Public Relations, Rochester Department of Commerce. Illus. 6 pp.

ST. LOUIS, MO.—Annual Report of the Supply Commission, 1946-47. A. K. Nashan, Supply Commissioner. Illus. Charts. 47 pp.

ST. PAUL, MINN.—Annual Report of the Board of Water Commissioners, 1946. Charts. Tables. 91 pp.

SEATTLE, WASH.—Annual Report of the Water Department. 1946. W. C. Morse, Superintendent. Charts. Tables. Illus. 64 pp.
—Milk Inspection and Milk Standards in King County. Bureau of Governmental Research and Services, University of Washington. 1947. In Cooperation with Association of Washington Cities. 20 pp.

WASHINGTON, D. C.—Organization of the District of Columbia. Preliminary report of the sub-committee on home rule and reorganization. U. S. Congress House Committee on the District of Columbia. 80th Cong., 1st sess. Government Printing Office, Washington 25, D. C. 1947. 59 pp.
—Progress in the Valley. TVA—1947. U. S. Government Printing Office. Illus. 82 pp.

WATERBURY, CONN.—Annual Report. 1946. Condensed reports of the various departments of the Municipal Government. Illus. Charts. 82 pp.

WATERVILLE, MAINE—Annual Report of Kennebec Water District. 1946. Masonic Bldg., 16 Common St. Charts. Tables. 67 pp.

Planning and Housing Reports

CHICAGO, ILL.—The Tenth Year of the Chicago Housing Authority. Chicago Housing Authority, 343 S. Dearborn St., 1947. Tables. Illus. 45 pp.

CLEVELAND, OHIO—Six-Year Capital Improvement Program. 1948-1953. Cleveland City Planning Commission. 1947. Tables. Charts. Mimeo. 69 pp.

DETROIT, MICH.—Planning Detroit. 1946. City Plan Commission, 9th Floor, 1214 Griswold St. 32 pp.

PORT HURON, MICH.—The Master Plan of Port Huron. A report to the City Plan Commission by I. S. Shattuck, Planning Consultant. 1947. Charts. Maps. Tables. 67 pp.

SAN FRANCISCO, CALIF.—Traffic, Transit, and Thoroughfare Improvements for San Francisco. 1947. By the Administrative Transportation Planning Council. Mimeo. 84 pp.

Government Planning

THE PROCESS AND ORGANIZATION OF GOVERNMENT PLANNING—*By John D. Millett. Columbia University Press, Morningside Heights, New York.* 1947. 187 *pp.* $2.50.

This is one of the first attempts to evaluate in print the work of the National Resources Planning Board and the effect of various personalities of the Board's staff on its program and influence. Dr. Millett also describes the work of the Office of War Mobilization and Reconversion and defines the obstacles facing the Council of Economic Advisers.

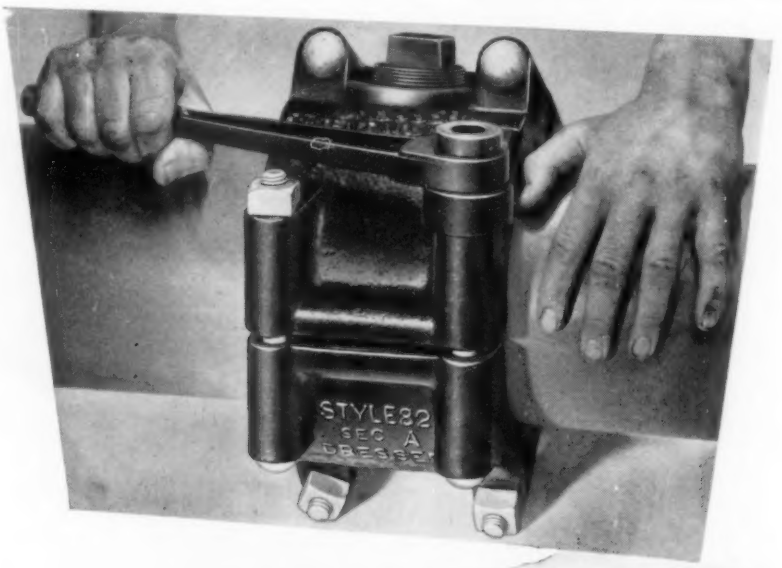
To the author's point of view, national planning is synonymous with presidential management. Unless planning can be integrated with day-to-day administration, he declares, it will be of little usefulness. The book deals mainly with national planning policies, but the chapters on the planning process and selling the plans should be of general interest.

Street Trees

STREET TREES FOR CITIES—*Bureau of Municipal Research and Service, University of Oregon, in cooperation with the League of Oregon Cities. Planning Bulletin No. 1. October* 1947. 16 *pp.* $1.00.

The bulletin has been prepared to encourage the development of community programs and to fill a need for practical information on street tree planting and control. It emphasizes the importance of a well-designed street tree plan and the careful selection of trees and their location.

A table of "Suggested Trees for City Streets" lists the characteristics and requirements for various trees. Recommendations are made for conducting a street tree inventory and preparing a master planting plan. A model ordinance regulating the planting, care, and removal of street trees is also included. The photographs, sketches, and layout make the publication both readable and useful.



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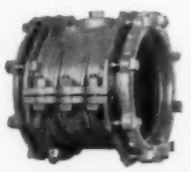
A wrench is the only tool you need to make a *permanent* repair on broken CIP, with the Dresser Style 82 "Adjustable" Repair Sleeve. This simple, sturdy sleeve can be installed, bottle-tight, in 5 to 10 minutes, even on off-size pipe. Interchangeable sections give adjustment range from Class "A" through Class "D" cast iron pipe. Sizes 4″, 6″ and 8″. Write for descriptive Form 441.



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Dresser Split Sleeve, Style 57C, encloses breaks, holes, splits in CIP up to 12″ diam.

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News and Illustrations

Items of interest to city, town and county officials and others concerned with the economical construction and efficient operation of public improvement undertakings

How Sludge-Contact Reactors Work In Water Treatment

By S. B. APPLEBAUM, *President*
Liquid Conditioning Corporation
Linden, N. J.

DURING the last 10 years, chemical-precipitation and coagulation-water-treatment plants have more and more adopted contact with sludge as an integral part of the process. The sludge-contact units combine mixing, scrubbing by sludge, and clarifying or separation of the treated water from the sludge, all in one unit. The water separates from the suspended sludge bed in a sharp plane of demarcation. Our tests show that the final effluent is clearer and, in the case of lime-treatment plants, softer. They indicate further that less chemical is needed to produce the same low hardness, and less space is required for the plant because the units can be made much smaller.

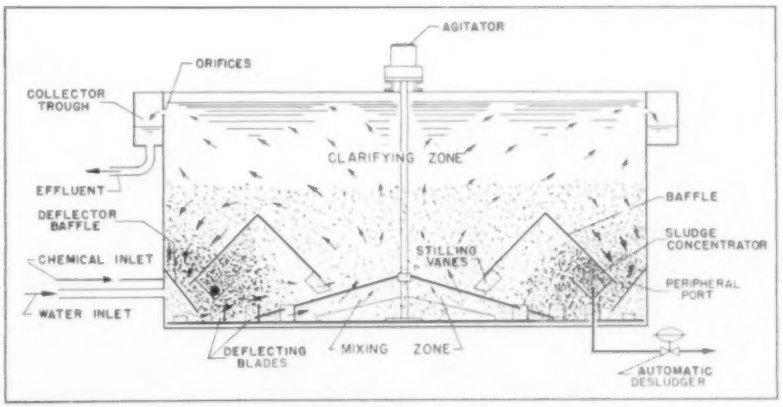
CORRECT PRINCIPLES OF DESIGN

A number of forms of these units have been evolved, but experience has shown that to attain the best results, a sludge-contact reactor must be based upon the following general principles of design:

1. The precipitates, or sludge, must not be allowed to settle out on the floor of the tank.
2. The sludge must be uniformly suspended.
3. The mixing of the chemical and the raw water should take place in the presence of the densest sludge.
4. Mixing should take place at high velocities.
5. The mixture of sludge, chemical, and water should take place as far away from the final effluent collector as possible.
6. Mixing should preferably be accomplished by mechanical means rather than by air.
7. Properly designed baffles should separate the mixing zone from the clarifying zone.
8. Sludge from the clarifying zone should be allowed to return to the mixing zone preferably through a separate port or passageway.
9. Sludge recirculation from the mixing to the clarifying zone should preferably take place through large orifices or passageways in the baffles, rather than through pipes.
10. The incoming water should be uniformly and symmetrically distributed.
11. The division of the unit into the mixing and clarifying zones should leave the greater part of the total volume and area available for the clarifying zone.
12. A sludge concentrator should be provided so that the sludge blown off to waste is as concentrated as possible.
13. Automatic desludging equipment should be included.
14. The velocity of separation of the sludge from the waters must be made low enough to take care of light flocs, especially in winter.

The Liquon Sludge-Contact Reactor, shown in cross-sectional elevation in the accompanying drawing, closely follows these 14 principles. Note that:

1. Sludge settling is avoided by an agitator covering the entire floor of the tank and equipped for speed adjustment.
2. Sludge suspension is uniform owing to the design of this agitator.
3. Mixing takes place so that sludge is always present when the chemical and water react.
4. Mixing takes place at the tank periphery where the velocities are greatest.
5. The deflector baffle forces the mixed water and sludge to the floor of the tank away from the effluent collector.
6. Mixing is accomplished by mechanical means.
7. Good separation of the clarifying from the mixing zone is accomplished by baffles covering a substantial portion of the area of the unit and stilling stators.
8. A separate port is provided for the return of the finer particles to the mixing zone.
9. The sludge recirculation takes place through orifice ports, not pipes.
10. A raw-water distributor below the deflector baffle provides symmetrical, uniform distribution with no jet action.
11. The full area of the unit is used for the clarifying zone, providing the lowest possible velocity for best separation of water and sludge.
12. A sludge concentrator is included.
13. Automatic proportional desludging and automatic back-flushing are included.
14. Conservative ratings in gpm per square foot of top area are selected.



A line drawing of the sludge contact reactor.

PROPER CHEMICAL CONTROL ESSENTIAL

In addition to correct mechanical design of the sludge-contact unit itself, it is essential to provide proper chemical control to insure optimum results. A floc or precipitate that is tough, rather than fragile or light, requires addition of the proper chemicals in the correct amounts.

The Liquon Decantrol chemical-feed control has been developed for wet feeders to insure the greatest accuracy of feed control. This chemical feeder provides the following advantages:

1. The feeding rate is easily and quickly adjustable.
2. The decanting pipe is quickly and automatically reset to its initial position before charging by the same motor which lowers it. Manual rewinding is thus avoided.
3. The signal lamp calls the operator's attention to the feed operation.
4. Positive, non-slip feeding is assured by use of a chain to drop the decanting pipe.

(*Continued on Page* 147)

MANAGEMENT INFORMATION SERVICE

Mr. Mayor or Manager:

Inaugurated late in 1945, this Service is now being used regularly by over 300 cities. It will enable you to receive immediate expert advice and reports on management problems in *your town or city.*

How It Works

You write, wire, or telephone for information on what is considered best practice in handling a specific municipal problem, what other cities are doing about it, what the trend is, etc. Over the past three decades ICMA has collected on a nationwide basis a vast amount of information which it now makes available to all cities on a subscription basis.

It Also Includes

1. In addition to replies on specific inquiries, subscribing cities receive from one to 12 subscriptions (depending on size of the city) to the monthly journal *Public Management* published since 1919, and devoted to the improvement of municipal administration.

2. Cities also receive from one to 10 copies of the 1947 *Municipal Year Book*, the authoritative resume of the activities and statistical data for more than 2,000 American cities, published since 1934.

3. One copy each of special information reports issued monthly. Partial list of recent reports:

How to Codify Municipal Ordinances
Rules of Order for City Councils
Trend Toward One-Man Police Cars
Granting Sick Leave With Pay
How to Reduce Insurance Costs
Management of Motor Equipment
Procedure in Establishing Merit System
Personnel Rules and Regulations
Water Charges Outside the City
Improving Handling of Traffic Violations.

Cities Using It

339 cities in 42 states ranging in size from 1,000 to 400,000 have subscribed to this Service. The number of subscribing cities in selected states are:

California	31 cities	Kansas	12 cities	Ohio	12 cities
Colorado	7 "	Maine	12 "	Texas	31 "
Florida	23 "	Michigan	38 "	Virginia	19 "
Georgia	15 "	Missouri	10 "	Wisconsin	12 "
Illinois	9 "	North Carolina	9 "	Canada	10 "

What It Costs

MIS is available to all cities and towns on a subscription basis regardless of form of government. The fee varies with the size of the city from $20 for under 5,000 population to $400 for cities of 250,000 to 500,000. For more details write:

INTERNATIONAL CITY MANAGERS' ASSOCIATION
1313 East 60th Street **Chicago 37, Illinois**

5. The Decantrol is controlled electrically rather than mechanically.

6. A synchronous motor is used and assures the same speed regardless of variation in load and line voltage.

Coagulation in Sludge-Contact Reactors is often aided by auxiliary processes, including pre-chlorination and use of activated silica.

APPLICATION

The Sludge-Contact Reactor together with the accessories described can be used in municipal plants for coagulation or lime softening; in paper, textile, and other industrial mills for process water, and in boiler plants (especially for silica removal by magnesium precipitates). The unit can also be used for fluoride removal by magnesium precipitates and for removal of turbidity, color, and hardness in general.

Condensed from a paper presented before the Ohio Section, American Water Works Association, Columbus, October 2, 1947.

Fred M. Link and Link Radio Corp. Combine

Fred M. Link and Link Radio Corp., manufacturers of emergency radio equipment, have been combined under Link Radio Corp., 125 West 17th St., New York, N. Y. This amalgamation is already in effect.

Rubber Strips For Beveling Concrete

The United States Rubber Co., 1230 Avenue of the Americas, New York, N. Y., has developed a method of forming bevels and decorative grooves on concrete surfaces by attaching rubber strips, which may be used repeatedly, to the forms instead of conventional wood strips.

The rubber strips are attached to the form with a waterproof adhesive and can be removed easily without chipping the mortar. The manufacturer claims

A close-up of a bridge pier with decorative lines made by rubber strips.

that a smooth finish free of blemishes results.

The new technique is being used for the first time on piers for a bridge spanning the Chesapeake & Delaware Ship Canal at Chesapeake City, Md.

Asphalt Institute Elects Maxwell to Presidency

The Asphalt Institute, 801 Second Ave., New York 17, N. Y., has elected A. M. Maxwell of The Standard Oil Co. (Ohio), Cleveland, Ohio, to the position of president and chairman of the executive committee, with Wallace D. Craig, Standard Oil Company of New Jersey; D. N. Myers, Byerlyte Corp.; L. W. Lee, of Husky Refining Co.; Harold J. Buck of Talco Asphalt & Refining Division, American Liberty Oil Co.; and N. H. Angell of Standard Oil Co. of California, completing the committee.

A. M. Maxwell

The five vice-presidents elected, with their respective divisional jurisdictions, are as follows: Atlantic-Gulf, Wallace D. Craig; Ohio-Great Lakes, D. N. Myers; Mid-West, L. W. Lee; Southwest, Harold J. Buck; Pacific Coast, H. N. Angell.

Bernard E. Gray was re-elected general manager-chief engineer, and Herbert Spencer, secretary of the Institute. F. V. Widger, Wilco Chemical Co., was reelected treasurer.

CIRCUL-AIR
FIRE HOSE DRYER

WRITE FOR BOOKLET

Illustrates how Circul-Air saves hose, shortens drying time, prevents mildew and rot, air conditions as it dries, improves station design.

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No Compressor
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BUST Concrete
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Powerful, hard-hitting tools that will pay for themselves again and again in money and time saved.

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Modernize — Powerize — Economize!

7 Power Sewer Cleaning Units *Offered by* TURBINE

TURCO ROBOT
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Portable Power Drive

Write for this Catalog → and get Maxi-Power Specifications.

Powerizing. Turbine Senior Windlass. Speeds from 14 to over 100 feet per minute.

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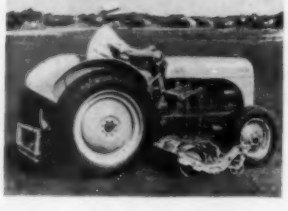
PARK CHALLENGER
FOR LOW-COST FLEXIBLE MOWING

The mobility, the speed of operation, the ease of handling, the ability to eliminate hand trimming and the low operating cost make the PARK CHALLENGER a mowing unit to be desired by every progressive executive responsible for turfed areas.



The PARK CHALLENGER (three Roseman Roller-Drive Mowers mounted on the new Ford Tractor or the Ford Tractor-Ferguson system) mows a swath 7 ft. wide. The unit can be attached or detached in a matter of minutes. The fingertip hydraulic control raises the mowers instantly to a maximum height of 10 inches. *Write for complete information.*

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CRAWFORD, CENTRAL & RIDGE RD.
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Please submit full detailed particulars as to your qualifications, experience, education and salary desired. All applications will be held in the strictest confidence.

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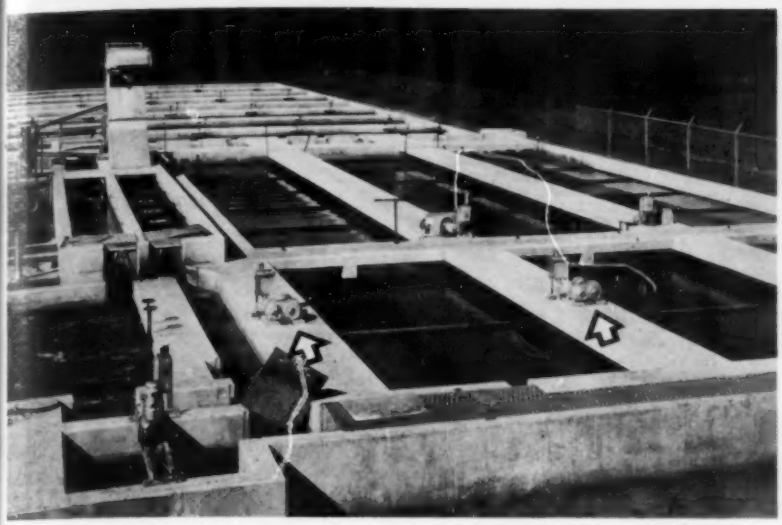
470 Fourth Avenue, New York 16, N. Y.

Variable Drives Improves Water Flocculation



The arrows indicate where the Reeves Motodrives are located.

As sanitary engineers have often said, flocculation and settling are the heart of the water-treatment process. With this in mind, Reeves Motodrives can play an important part. When used with various types of flocculation equipment, it can change the rate of agitation in accordance with the physical character of the raw water being treated. This is particularly important where the character of the raw water is subject to wide variation, such as is the case when it is drawn from many rivers or streams.

One of the important applications of this equipment is in the "Floctrol" system built by the Jeffrey Mfg. Co., Columbus, Ohio. This calls for the mixing to be performed in four different compartments separated from one another by solid baffles except for large ports at the center through which horizontal rotating shafts pass. Paddles are carried on these rotating shafts. The arrangement of paddles and rates of rotation are such that progressively decreasing rates are obtained in each compartment with increasing detention time.

Fluorescent Fixtures

Making its appearance in public buildings of all types, is the Smithcraft Skylite, a fluorescent fixture with ribbed glass sides and louvered bottom panel. It is particularly suitable for installation in offices, courtrooms, and other public areas of municipal buildings.

Smithcraft also makes a complete line of recessed fluorescent troffers for lighting all types of large rooms as well as corridors. This fixture may be mounted in any type of ceiling construction, and an acoustical ceiling may be suspended directly from the troffer frame. Other fluorescent fixtures that have found wide use in municipal buildings include Dayliter and Vision. Dayliter is particularly suited for schoolrooms and offices where better-than-average illumination is required. There is a full line of industrial fixtures with reflectors of baked enamel which have many uses in garages, fire and police stations, storerooms, and the service areas of public buildings. Complete information on these units may be obtained from Smithcraft Lighting Div., Chelsea 50, Mass.

200
UNUSED
MARK-TIME
PARKING
METERS

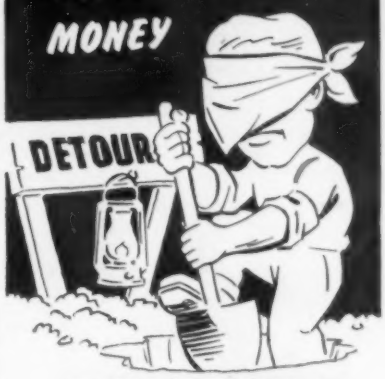
—Smart, beautiful appearance
—Strongest construction
—Only 3 moving parts
—Operates in all kinds of weather
—Thief-proof like telephone coin boxes
—Made by specialists in time control devices.

Priced for quick sale, including steel mounting post. Only $15.00.

FOR DETAILS WRITE

J. R. RICK
470 E. Washington Street
New Castle, Pa.

..BLIND DIGGING wastes TIME and MONEY



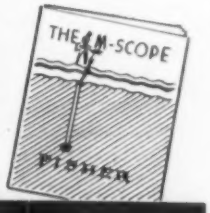
FISHER
M-SCOPE
Pipe & Cable Finder

. . . . . locates pipe bends, dead ends, service stubs, and traces the exact course of buried pipe and cable lines up to 12 feet deep, with pinpoint accuracy. This inexpensive electronic device eliminates time and money wasted on exploratory digging.

FISHER M-SCOPES $149.50 UP DEL.

Send for FREE Booklet

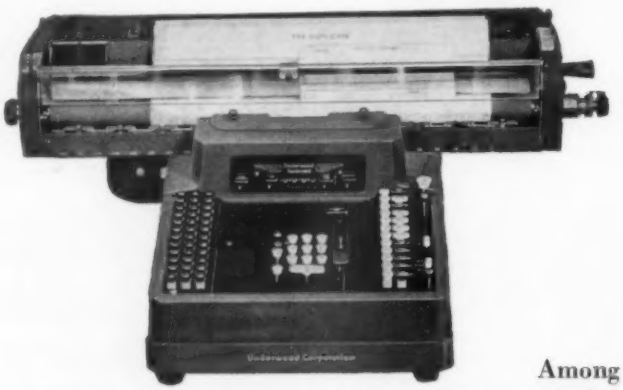
16 page operating manual describes M-SCOPE and many of its profitable uses.



Fisher Research Laboratory, Inc.
PALO ALTO · CALIFORNIA

A HAPPY NEW YEAR FOR MUNICIPALITIES

One year ago in THE AMERICAN CITY we wished a Happy New Year to the City of Passaic, New Jersey. The Commissioner of Revenue and Finance compared the old work of writing 20,000 bills by hand with the modern mechanized Sundstrand system. Today, a year later, Commissioner Thaddeus A. Borszcz says: "With a year's experience we have been able to turn out the bills even more promptly than a year ago."



Sundstrand Model D Accounting Machine

Among them are many users of the Underwood Sundstrand Municipal Accounting Machine. In October we showed how Lompoc, California, with 3,379 population uses a Sundstrand to write one bill covering four utility services—water, electricity, garbage and sewer rentals — with the result that two or three days' former work is performed in one. . . . In December we told the story of Indianola, Indiana, where Sundstrand writes one bill for light, heat and power—where three were used formerly.

In public utility billing, tax accounting, budgetary accounting and payroll work, happiness often begins with the installation of Sundstrand Municipal Accounting Machines, because of the greater speed, accuracy and legibility they bring.

UNDERWOOD CORPORATION

Accounting Machines . . . Typewriters . . . Adding Machines . . . Ribbons, Carbon Papers and Other Supplies

One Park Avenue — New York 16, N. Y.

Sales and Service Everywhere

Luminous Police Belt

A combination day and night reflecting and luminous safety patrol belt for traffic policemen, firemen, and municipal workers at night is available in a luminous cloth from the American Cord and Webbing Co., New York 13,

This motorcycle officer can now be seen as well as heard.

N. Y. At night the reflecting part (gray fabric) reflects light in the same manner as roadside signs and markers. During the day the fluorescent part is white and highly visible. After exposure to light, the belt glows brightly in the dark for many hours. Activation by daylight or electric light can be repeated indefinitely.

Wearing this safety patrol belt in total darkness, the traffic policeman on foot or on a motorcycle is visible for a considerable distance; when headlights are thrown upon the policeman, the reflecting part of the belt shines forth.

Fairbanks-Morse Personnel Changes

The following personnel changes have been made in the sales organization of Fairbanks, Morse & Co., Chicago, Ill.

J. C. Elmburg, manager of the company's Boston branch house, has been transferred to the company's Atlanta, Ga., branch house to assume the position of manager of that area, replacing G. N. Van Epps, who has resigned.

V. O. Harkness, formerly manager of the Diesel Division at Chicago, has been appointed manager of the Boston branch; T. M. Robie, of Chicago, has been appointed manager of the General Diesel Sales Division.

Porous Plate Bottoms For Rapid Sand Filters

These are some of the advantages of porous plate bottoms for rapid sand filters, replacing the conventional layer of coarse gravel:

The arrangement of the bottom of the filter makes it adaptable to existing filters where it is desirable to eliminate strainers and gravel layers at a minimum of change in existing construction.

The elimination of the graded gravel reduces the height of the filter in the new plants and results in considerable savings.

The elimination of the gravel eliminates any possibility of non-uniformity of the filter bed. The one-grade filter medium used can be turned over and displaced laterally or upwardly without resulting in any upheaval and mingling of graded material.

The uniform velocity of wash water over the entire bottom gives uniform backwashing throughout the entire filter. This results in suspension of all filtering material and minimizes objectionable mud balls.

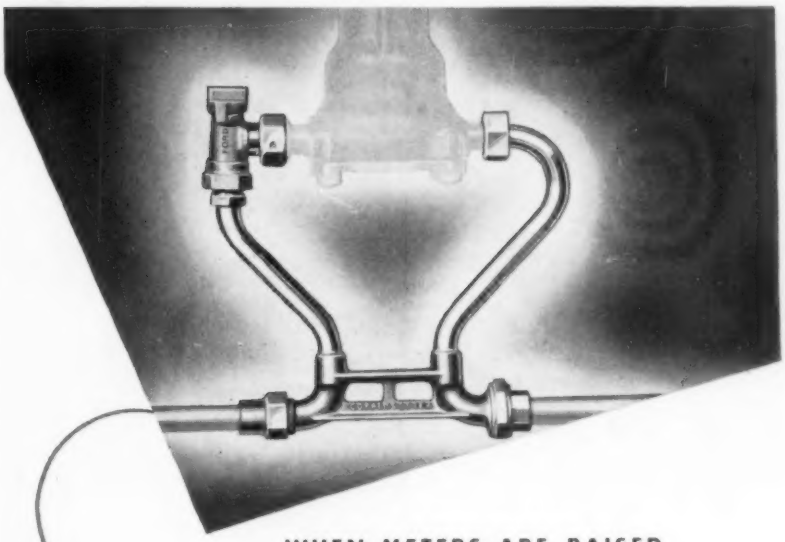
Corrosion is not a factor.

There are no strainers to sheer off because of lateral movements.

The backwash head loss through the porous underdrain system totals less than 2 feet. At the same time, the system gives better backwash distribution than any other system.

Because there is no "graded gravel," any handling or replacement of filter material is greatly simplified.

The porous bottoms for rapid sand filters are a development of Thomas R. Camp, consulting engineer of Boston, Mass., made while he was a professor of sanitary engineering at Massachusetts Institute of Technology, and constitute a part of the equipment furnished by Walker Process Equipment, Inc., Aurora, Ill. Bulletin 12S12, distributed free, describes the equipment.



WHEN METERS ARE RAISED

FORD COPPERSETTERS

LOWER INSTALLATION COSTS

Ford Coppersetters save many fittings and much cutting and threading labor when meters are raised above service line levels.

Made in heights to raise meters from 6" to 36", styles to permit flexibility in spacing of bottom connections and special designs for unusual conditions.

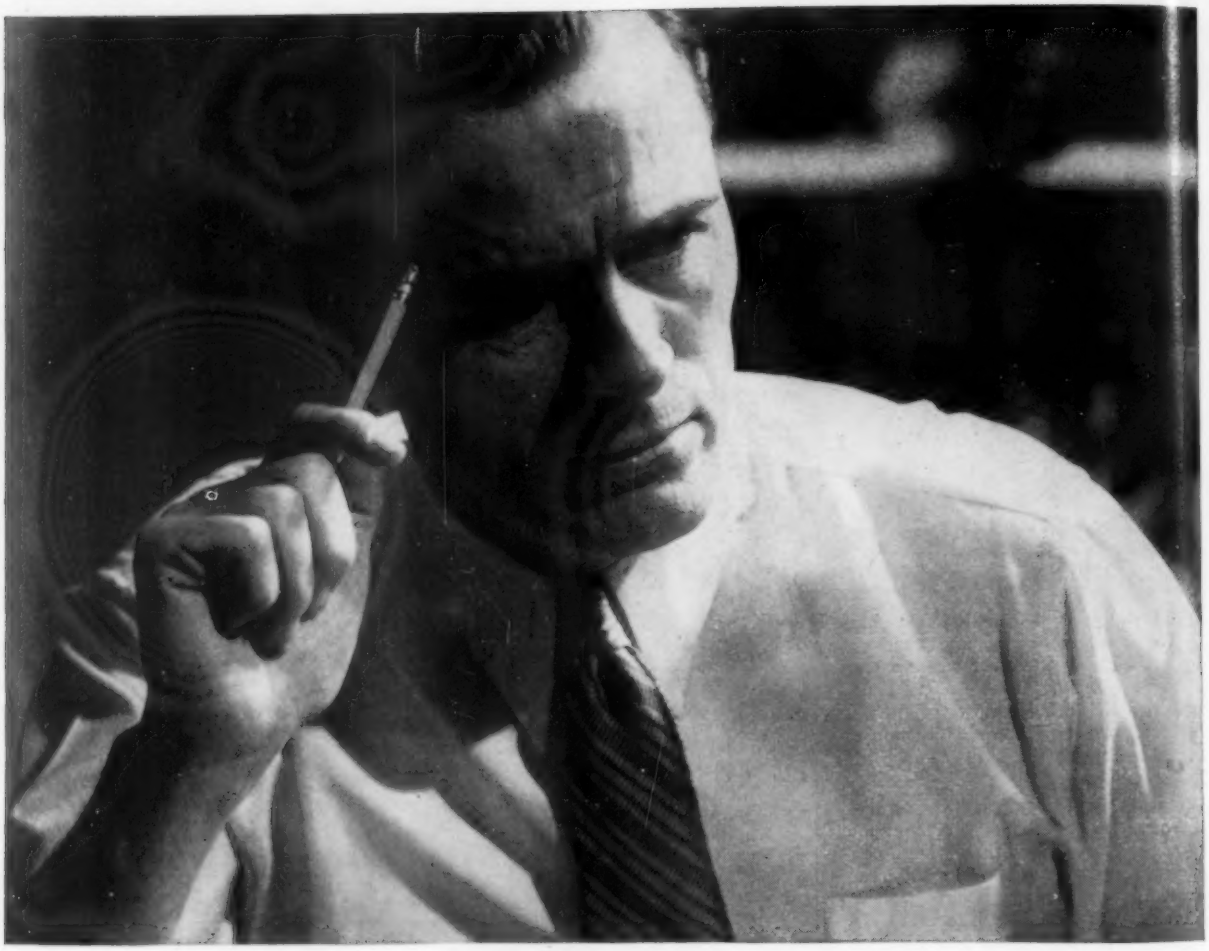
All copper and bronze construction, maximum hydraulic efficiency, automatic electric bonding and many other money-saving features. Complete information in Catalog No. 46. Send for your copy today.

THE FORD METER BOX COMPANY, INC.

FORD

FOR BETTER WATER SERVICES

Wabash, Indiana



When does a man start slipping?

The moment comes to every man.

The moment when he realizes that he isn't the man he used to be . . .

That the days of his peak earning power are over . . .

That some day not so very far away some younger man will step into his shoes.

When does this time come?

It varies with many things.

But of one thing you can be sure. It will come to you as surely as green apples get ripe– and fall off the tree.

Is this something to worry about? Well, yes. But . . . constructively. For that kind of worrying can lead you to save money systematically.

What's the best way to do this? By buying U. S. Savings Bonds . . . *automatically*. Through the Payroll Savings Plan. Or through the Bond-A-Month Plan at your checking account bank.

Either method is an almost foolproof system of saving. It's automatic. You don't put it off. There's no "I'll start saving next month"—no "Let's bust the piggy bank."

And you get back four dollars, at maturity, for every three invested.

So why not take this one step now that will make your future so much brighter?

Get on the Payroll Savings Plan—or the Bond-A-Month Plan—today.

Sure saving because it's automatic—U.S. Savings Bonds

Contributed by this magazine in co-operation with the Magazine Publishers of America as a public service.

Barber-Greene Appoints Distributor

The Barber-Greene Co., Aurora, Ill., has appointed Capitol Equipment, Inc., Troy, N. Y., as exclusive distributor in the Albany and Mohawk Valley Territory, representing Barber-Greene's Construction and Industrial Divisions.

Products being handled by Capitol include bituminous mining and paving machines, portable bulk-material loaders, and ditchers.

Sub-Soil Stabilization by Pneumatic Pressure Grouting

The Weber Injector in operation on a subgrade consolidation project. The greatest depth of injection is 76 feet below the surface grade. *A*—air pressure line; *B*—material discharge line; *C*—air compressor.

The subsidence of buildings, bridges, reservoirs, and other structures erected on filled ground or unstable subsoil strata can now be eliminated or corrected, with a minimum of expense, by Presscrete soil stabilization processes. The stabilization is accomplished by pneumatic pressure injection of suitable materials into the compressible or yielding subsoil formation, thus solidly compacting the ground to the required permanent safe load-carrying capacity.

Various Presscrete methods are extensively used also for the repair and reconditioning of weakened or ruptured structures that have been injured by floods, by settlement from insecure pile foundations, or by seismic disturbances.

The Presscrete Co., Inc., 243 Graybar Bldg., New York 17, N. Y., specializes in the performance of all the various types of soil stabilization, Presscrete construction, pressure grouting, and cementation work, including construction of Presscrete foundation piling of any required length, shape, or size. These piles are built in place entirely by compressed air without the use of customary pile-driving equipment and without objectionable noises, vibrations, or ground disturbances. Presscrete piles can be placed in restricted places with low headroom where any other kind of foundation pile construction is extremely difficult or impossible.

CEMENT GUN COMPANY

"GUNITE" CONTRACTORS

GENERAL OFFICES—ALLENTOWN, PENNA., U.S.A.

NO MAINTENANCE IN 22 YEARS

The before and after photos show a reservoir we re-lined with "GUNITE" in 1925 for the Village of East Aurora, N. Y. Recently Mr. V. E. Haemmerlein, Village Engineer, wrote us:

"The job you did of Guniting our reservoir is still in first class condition. Some hair cracks have developed near the top. I drilled one-half-inch holes where some of the cracks showed but find that they are only about one inch deep. They do not go beyond reinforcing. We have had no maintenance whatsoever."

We can similarly solve your problem if you have an old leaky or disintegrated reservoir. We invite you to call on us for complete information, recommendations or estimates on any "GUNITE" work which you may be planning.

Our 72-page bulletin D2300 describes this job and scores of other profitable uses of "GUNITE." Write for your free copy today.

★ ★

Fresh, high quality broom fibres last longer

AFRICAN BASS FIBRES

INDIA PALMYRAH STALKS

The longer mileage you obtain from fresh broom fibres means less time-taking refilling of the broom core and valuable man-hours put to an extra use. The use of fresh, high-quality fibres in your mechanical sweeper is sound economy these days.

We are able to service every need in all types and sizes. We would be happy to receive your request for samples and quotations.

MOUNTAIN HICKORY SPLINTS

STEEL WIRE

SNOWSWEEPER RATTAN

The OTTO GERDAU CO.

Established 1872

82 Wall Street, New York 5, N. Y.

CLEVELAND

"One of America's Safest Cities"

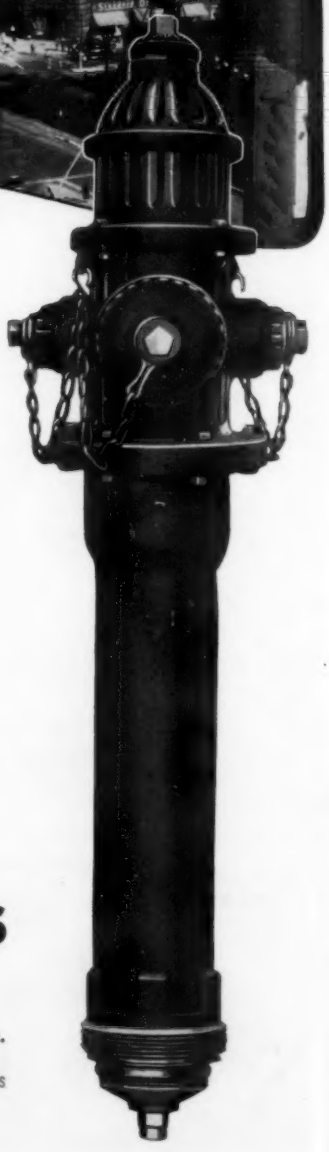
The Mathews Firemen say

AND THEY'RE PERFECTLY RIGHT. For Cleveland is Mathews-Hydrant-protected. These great hydrants can be depended on to do their important job—to keep on working in their trouble-free way. That has been proved in over 75 years' record-making the world around.

Of course a Mathews can be *damaged*—it can be hit by a truck. But there again the Mathews scores. Because the barrel, containing all the working parts, is *removable*. You simply unscrew the barrel from the elbow, lift it out of the protection case, and screw in a spare. All in a few minutes' time. Interruption to service is brief; replacement and labor cost is low; and the damaged barrel is repaired in the shop, held as a spare. Yes, Mathews design licks even the problem of damage by traffic.

Is it any wonder that Cleveland, sixth city now in the U. S., and pre-eminent in so many ways, should choose Mathews Hydrants?

OTHER MATHEWS FEATURES: Head can be rotated 360° • Replaceable head—nozzle outlets easily changed • Nozzle levels raised or lowered—no excavating • True compression-type main valve • Only one part to oil—operating thread • A modern barrel makes even the oldest Mathews new



MATHEWS HYDRANTS

Made by R. D. WOOD COMPANY

Public Ledger Building, Independence Square, Philadelphia 5, Pa.

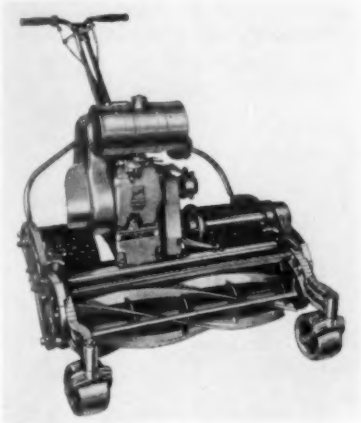
Manufacturers of "Sand-Spun" Pipe (centrifugally cast in sand molds) and R. D. Wood Gate Valves

Power Lawnmower For Large Areas

The Park 30 power lawnmower, manufactured by the Jacobsen Mfg. Co., Racine, Wis., is designed for large areas such as parks, municipal golf courses, and lawns.

Equipped with a 3-hp Wisconsin air-cooled engine and a 5-blade, all-steel welded reel 7½ inches in diameter and 30 inches wide, the Park 30 has cutting heights of ⅜ to 2½ inches. Drive wheels are located behind the cutter unit and inside the two side frames, permitting cutting close to trees, flower beds, or buildings.

The mower has a differential drive with heavy bevel gears enclosed in oil-tight housing. Power transmission is through heavy-duty chain and machine-cut sprockets. Levers are located at the handle for finger-tip control; in addition, a special traction clutch at the lower-right-hand side of the mower disengages both reel and traction clutch, permitting easy guiding of the machine for storage.

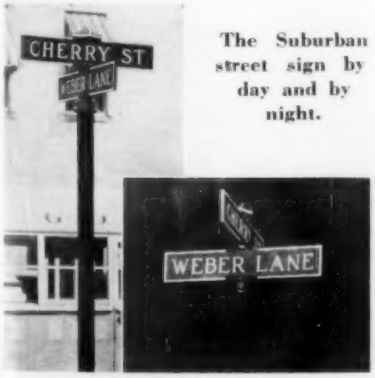


On this Jacobsen Park 30 mower, the cutting unit or drive members may be removed without disturbing either side frame.

Cast Aluminum Street Signs

The Lake Shore Pattern Works, 654 West 19th St., Erie, Pa., manufactures street markers of corrosion-resistant cast aluminum, coated by Alumalite Anodizing of the casting followed by a bonded coating of new acid and alkali-proof black background. Especially finished to reflect light, the 4-inch aluminum letters ground into the signs are finished off with an acid and alkali-proof surfacer. The signs are then framed with ⅞-inch galvanized steel. The sign is attached to the pole by banks and stainless steel clips; no bolts are needed.

The Suburban marker is similar to the street marker described, except that the Suburban is mounted on the top of the poles and the signs are stacked on each other. Any desired angle may be effected in the criss-cross, and several signs may be attached to the same pole.



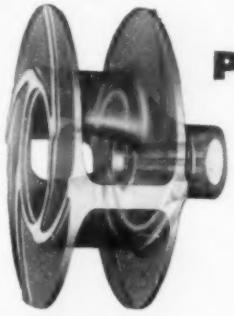
The Suburban street sign by day and by night.

American Concrete Pipe Holds Convention in New Orleans

The 40th annual convention of the American Concrete Pipe Association, 228 N. LaSalle St., Chicago 1, Ill., will be a three-day session in March at the Hotel Roosevelt in New Orleans, La. Registration and preliminary meetings will take place on Thursday, March 11.

Johns-Manville Purchases Van Cleef Bros.

Johns-Manville Corp., 22 E. 40th St., New York 16, N. Y., has purchased Van Cleef Bros., Inc., of Chicago, Ill.



PEERLESS *Non-Clog* IMPELLERS KEEP SOLIDS MOVING...

NO RINGS TO CLOG – NO SEALS TO BIND

The improved Peerless Impeller, shown at left, has unique repelling vanes on both the outer shrouds, and scientifically designed working vanes of uniform thickness to assure *non-clog* pumping action. Peerless *Non-Clog* Sewage Pumps offer a dependable means of pumping entrained solids.

PEERLESS NON-CLOG SEWAGE PUMPS

Type NCH
Horizontal Type
For dry basin installation

Type NCV
Capacities: up to 7000 g.p.m.
Heads: up to 70 feet

A departure from the conventional construction of sewage pumps has resulted in an advanced design that has proved Peerless Sewage Pumps to be non-clogging in action as well as in name. All wearing rings, end plates, filler rings, etc., have been eliminated, and recirculation losses minimized. These pumps are designed for dry basin installation and are available in both horizontal and vertical types, for all types of drive, up to 100 h.p. For a minimum of down time and a maximum of clog-free service, specify Peerless *Non-Clog* Sewage Pumps.

Request Bulletin. All Peerless improvements and advantages in non-clog sewage pump design are described in this new bulletin. Write for No. B-154.

fmc PEERLESS PUMP

PEERLESS PUMP DIVISION
Food Machinery Corporation

Factories: Los Angeles 31, Calif.; Quincy, Ill.; Indianapolis, Ind.

District Offices: Chicago 40, 4554 No. Broadway; Philadelphia Office: Suburban Square, Ardmore, Pa.; Atlanta Office: Rutland Bldg., Decatur, Georgia; Dallas 1, Texas; Fresno, California; Los Angeles 31, California.

How to cut
SEWAGE DISPOSAL COSTS
with
Transite* Sewer Pipe
Lower Installation Costs
● Transite Sewer Pipe comes in long 13-foot lengths. These longer lengths require fewer joints in the completed line and make it easier to lay this pipe to line and grade. The result is a substantial saving in time and labor.
The light weight of Transite is another advantage that helps cut down installation costs . . . many sizes can be lowered into the trench without heavy mechanical equipment...and handling all along the line is faster and easier.
Transite offers lower excavation costs, too. Other important savings are possible with this pipe because it has an exceptionally smooth interior which offers minimum resistance to the flow of sewage. Its flow capacity is unusually high—n-.010. This often permits use of flatter grades and shallower trenches—with correspondingly lower excavation costs. Or, as an alternate economy, smaller diameter pipe may be used. Also, Transite Sewer Pipe is available in 4 strength classes, permitting selection of strength suitable to the job, and often eliminating need for concrete cradles.
Low maintenance through the years. Made of asbestos, cement and silica, Transite Sewer Pipe is steam-cured for unusual resistance to corrosion. Tight, sleeve-type joints safeguard against root trouble. And every length of Transite Sewer Pipe is factory-tested for strength and uniformity. This adds up to minimum maintenance costs through the years.
For Further Information, write Johns-Manville, Box 290, New York 16, N. Y.
*Reg. U. S. Pat. Off.
Johns-Manville
JOHNS-MANVILLE
JM
PRODUCTS
Transite Sewer Pipe

Fibre Conduit Co. Now Orangeburg Mfg. Co.

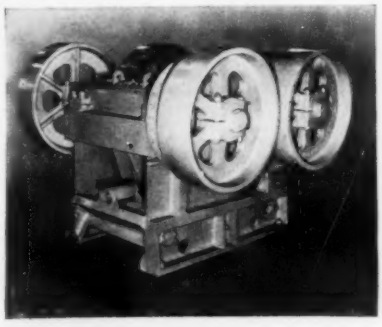
Orangeburg Mfg. Co., Inc., is now the name of The Fibre Conduit Co., according to H. J. Robertson, Jr., president.

The company, whose address is 292 Madison Ave., New York, N. Y., was founded in 1893 to manufacture fibre conduit used underground as a raceway or distribution duct for electric power and communication cables. Later, a similar product for under-floor electrical distribution raceways was added to the company's line.

In 1943, the company introduced a fibre sewer pipe for use in house-to-sewer and house-to-septic-tank connections. A $1,500,000 expansion program at the Orangeburg, N. Y., plant was completed early this year.

New Cedarapid Twin Jaw Crusher

A line of jaw crushers with two movable jaws instead of one movable and one stationary jaw was recently put on the market by the Iowa Mfg. Co., Cedar Rapids, Iowa. The twin jaws are operated by two eccentric shafts and a double set of flywheels. This provides not only greatly increased capacity, but exceptionally smooth operation, because of the nearly 100%-balanced rotary motion in the Cedarapid crusher.



This jaw crusher is available in sizes, 12 by 16, 16 by 24, 12 by 36, 18 by 36.

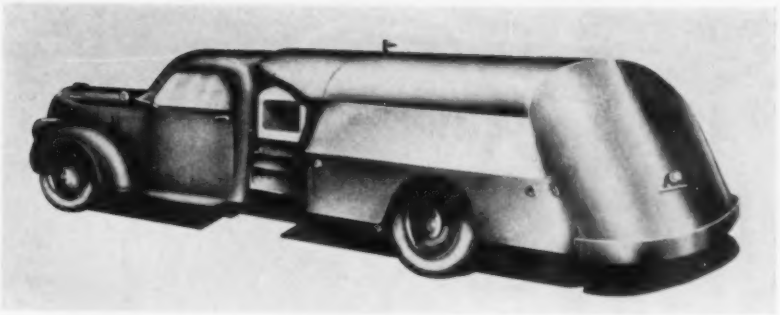
It may also be used as a primary or a secondary crusher where there is an unusually high percentage of crushing of large-sized gravel.

Streamlined Street Flusher Latest Rosco Product

The Rosco Mfg. Co., Minneapolis, Minn., announces the addition of a fully skirted streamlined street flusher to its line of road- and street-maintenance equipment.

The truck-mounted flusher has one master directional flow-control valve which controls one or all flushing nozzles; it is equipped with Clayton Hytrol valves.

Other features are a low center of gravity with tank weight equally distributed through the use of longitudinal sills over the entire truck frame, wrought-steel piping throughout, and Victualic couplings to reduce motor vibration transmission to the tank.



The Rosco street flusher for flushing streets at high pressure, fighting fires, cleaning sewers, spraying trees, and pumping out basements.

The flusher is equipped with either a Hercules IXB, 4-cylinder engine or a Hercules QXC5, 6-cylinder engine which includes radiator, air cleaner, water pump, full pressure lubrication, electric starter, 7-gallon gasoline tank, and in either case is equipped with a 650-gpm Gould pump, bronze-fitted and mounted integral with the engine. The flusher is built with capacities of 1,200, 1,600, and 2,000 gallons.

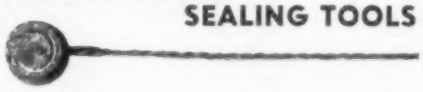
AMALEAD

THE WIRE WILL BREAK BEFORE IT WILL PULL OUT OF LEAD

Reg. U. S. Pat.-Off.

SEALS OF MERIT—for EVERY PURPOSE

WIRE SEALS and SEALING TOOLS



Above: seal for parking meter coin containers, water, gas and electric meters. Also padlock and coin bag seals and sealing tools. Wire lengths as required.

Above: self-locking car seals for automatic voting machines, water and steam valves—no sealing tool required; actual size 3/8" x 8½".

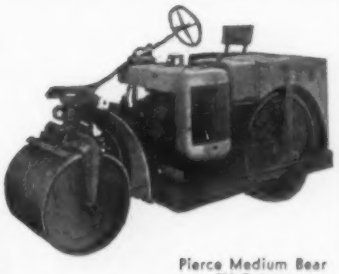
Write for samples, literature and quotations

E. J. BROOKS COMPANY 169 North 13th Street Newark 7, New Jersey.

1873—*Serving Industry 75 Years*—1948

A Roller For Every Job

Sturdy, heavy-duty rollers, engineered to stand up under the toughest conditions. Pierce-Bear Tandem Rollers are powered by economical Allis-Chalmers 4-cylinder industrial type gasoline engines. Variable weights, from 3½ to 5 tons with built-in water tanks for ballast and wet rolling.



Pierce Medium Bear 3½-5 tons

Pierce Baby Bear 2½-3 tons

The new 2½-3-ton Pierce Baby Bear is designed for close-in work and small area maintenance. It works against a curb up to 25 inches high and within 1½ inches of a higher wall or building. Final drive is within the rear roll. Use Pierce-Bear Tandem Rollers for all-around performance. Write for folder.

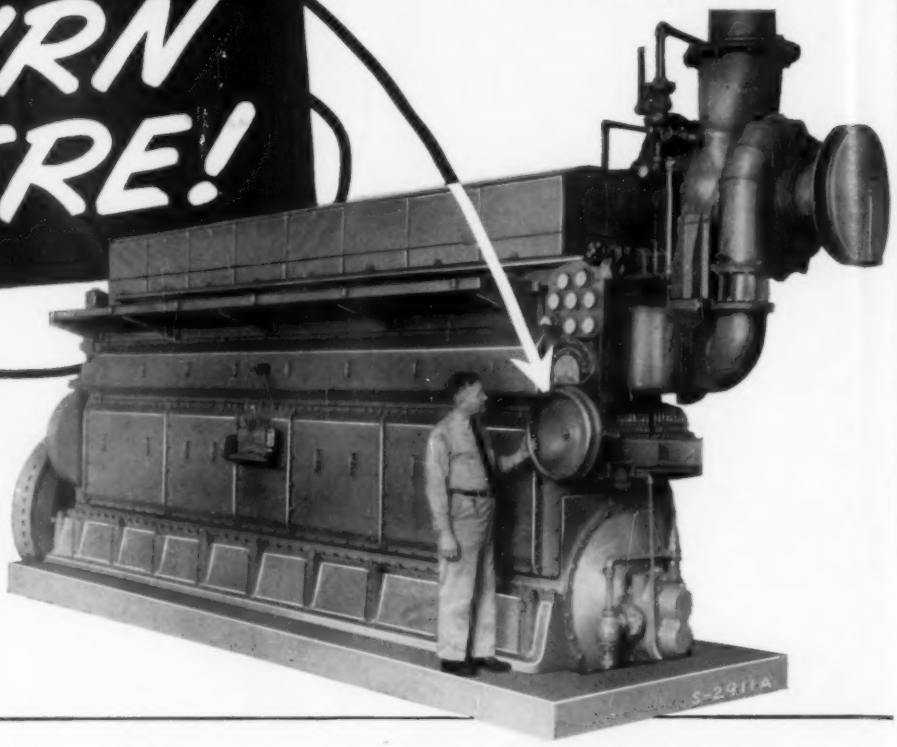
Pierce-Bear Rollers

Lewis Manufacturing Co.

415 Hoefgen Ave.—San Antonio 6, Tex.

TURN HERE!

A Worthington Dual Fuel Diesel Engine, Turbo-Charged



FOR THE POWER YOU NEED

WITH THE FUEL YOU HAVE

Worthington Dual Fuel Diesel Engines in your sewage plant deliver unfailing power—no matter how "temperamental" your gas supply may be. A single turn of the control wheel provides oil, gas, or oil-and-gas in any ratio. And when gas pressure drops too low, these versatile engines shift to oil *automatically*—a feature unequalled for simplicity, positive action and easy adjustment.

ECONOMY ALL THE WAY

Operating on two of the cheapest fuels — sewage gas and Diesel oil — Worthington Dual Fuel Diesels cut power costs still further by eliminating expensive stand-by equipment and power purchased outside. Add their outstanding thermal efficiency on either fuel and you have savings in every detail of operation.

AS BLOWER DRIVES, GENERATORS, PUMPING UNITS, ETC.

Foremost in every step of Dual Fuel Diesel development, Worthington offers these units in sizes from 225 to 2470 hp, covering the range of sewage plant applications. For further proof that *there's more worth in Worthington*, write to *Worthington Pump and Machinery Corporation, Engine Division, Buffalo, N.Y.*

WORTHINGTON

E7-8

YOUR PARTNER IN POWER PROGRESS

Diesel engines, 150 to 2,640 hp . . . gas engines, 175 to 2,470 hp . . . dual fuel engines, 225 to 2,470 hp.

WORTHINGTON-BUILT AUXILIARIES

Air King Compressors

Oil Transfer Pumps

Cooling Water Circulating Pumps

Evaporative Type Engine Water Cooler

Allington Appointed Wickwire Manager of Sales

H. C. Allington has been appointed General Manager of Sales of the Wickwire Spencer Steel Div. of The Colorado Fuel and Iron Corp., 500 Fifth Ave., New York 18, N. Y.

H. C. Allington

Several years after opening up New England and Upper New York sales territories for a gasoline-pump manufacturer, Mr. Allington became Eastern district manager for the Sharpsville Boiler Works. Later he was associated with American Machine and Metals, Inc., and in 1943 he joined Wickwire Spencer Steel as manager of a new products department.

Top Management Officers For Mueller Co.

The Board of Directors of the Mueller Co., Decatur, Ill., has announced the election of Lucien W. Mueller as chairman of the Board, Albert G. Webber, Jr., president and treasurer, and J. W. Simpson, executive vice-president.

← Lucien W. Mueller

Albert G. Webber, Jr. →

← J. W. Simpson

Mr. Mueller was formerly vice-president in charge of administrative and sales engineering; Mr. Webber was general counsel for the firm, and Mr. Simpson has been vice-president in charge of sales.

Elections by Diesel Association

Gordon Lefebvre, president of the Cooper-Bessemer Corp., was elected the new president of the Diesel Engine Manufacturers Association at the recently held annual meeting of the Association.

Otto H. Fischer, president of The Union Diesel Engine Co., and L. W. Metzger, vice-president of The Baldwin Locomotive Works, were elected vice-presidents of DEMA.

Robert H. Morse, Jr., vice-president and general sales manager of Fairbanks, Morse & Co., was reelected treasurer of the Association, and Harvey T. Hill was reappointed executive director.

Elected to serve two years on the Board of Directors were George W. Codrington, vice-president of General Motors Corp. and general manager of Cleveland Diesel Engine Division; E. J. Schwanhausser, vice-president of Worthington Pump and Machinery Corp.; A. W. McKinney, vice-president of the National Supply Co.; Mr. Morse, and Mr. Metzger.

The following were elected to serve one year on the Board: C. S. Herbert, executive vice-president of the Enterprise Engine & Foundry Co.; W. E. Corrigan, vice-president of the American Locomotive Co.; Robert E. Friend, president of Nordberg Mfg. Co.; Mr. Lefebvre, and Mr. Fischer.

Traffic Surveys

Edwards and Kelcey, consulting engineers, New York 7, have opened an office at 210 Market St., Newark 2, N. J. The firm specializes in the fields of traffic, highway, and transportation. Current projects include a study to establish a line of free-way across the Bayonne Peninsula in Hudson County, N. J.

GOOD REPORTING— ON REAL ECONOMY!

"Flexible" Power Drive at work for the Melrose, Mass., Public Works Department, Sewer Division. The equipment has paid for itself many times over according to PWD officials. (Photo: Leo T. Murray)

"A machine that makes money? Sure. If money saved is money made, then this machine makes money—both for the city and every tax payer who helps make the city a going concern.

"The money-making machine is a Public Works Dept., 'Flexible' power-driven drain cleaner that cuts through obstructions in the city's sewer mains. A spiral cutting head at the end of a 300-foot spinning 'Flexible' shaft is the spear head of the machinery that cuts through roots and other obstructions that block sewers and surface drainage pipes.

"Formerly the same job was done by a hand operated mechanism that pushed jointed wooden poles through the clogged drains, and sometimes punched through an obstruction but seldom completely removed it, according to S. Hale Harding, superintendent of sewers and drains.

"With the powered equipment, which has been in use for about a year, a three man crew can do a better job and do it faster. In the course of a year the crew can handle emergency calls, and perform maintenance work on nearly all branch and trunk lines in the city's 65 miles of underground sewers. In addition, there are 26 miles of surface drainage mains that have to be kept in first class condition, Supt. Harding said."

—as reported in The Melrose Free Press

COMPLETE DETAILS OF THIS TIME-SAVING, WORK-SAVING "FLEXIBLE" POWER DRIVE PRESENTED IN OUR NEW 36-PAGE MUNICIPAL-INDUSTRIAL CATALOG. *Write for Your Copy Today.*

FLEXIBLE SEWER-ROD EQUIPMENT CO.

9059 Venice Blvd., Los Angeles 34, California

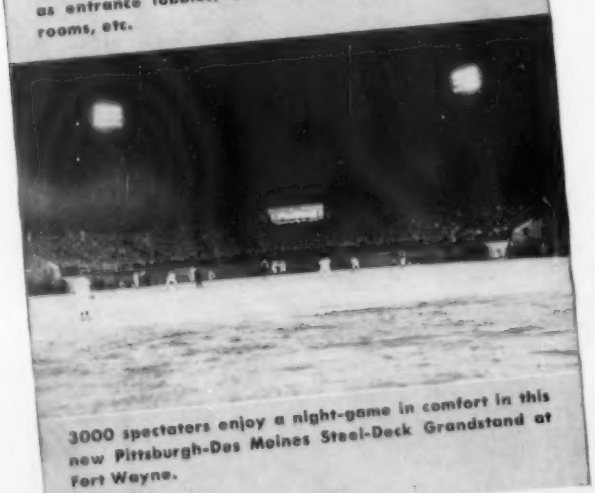
855 Board of Trade Bldg. Chicago 4, Ill. | 401 Broadway New York 13 | 147 Hillside Ter. Irvington, N. J. | P. O. Box 185 Atlanta | 41 Greenway St. Hamden, Conn.

1624 Harmon Place Minneapolis 3, Minn. | 29 Cordian Ave. Roslindale 31, Mass. | P. O. Box 994 Pittsburgh | P. O. Box 447 Lancaster, Texas

WHERE Sports THE THING

HERE'S SAFE AND COMFORTABLE SPECTATOR ACCOMMODATION!

The weather-tight deck of Pittsburgh-Des Moines Steel-Deck Grandstands permits use of the underdeck areas as entrance lobbies, offices, dressing rooms, storage rooms, etc.



3000 spectators enjoy a night-game in comfort in this new Pittsburgh-Des Moines Steel-Deck Grandstand at Fort Wayne.

PITTSBURGH •DES MOINES *Steel Deck* GRANDSTANDS

This handsome soft-ball stadium, recently erected at the Zollner Machine Works athletic field in Fort Wayne, indicates the wide applications of Pittsburgh-Des Moines Steel-Deck Grandstands for municipal and industrial spectator-sports requirements.

As is the case with our school and college installations throughout the country, the Stand is of unitized steel construction—a feature permitting *complete freedom for the designer in type, capacity, and future extension.* Our Grandstand Brochure gives full details—write for your copy!

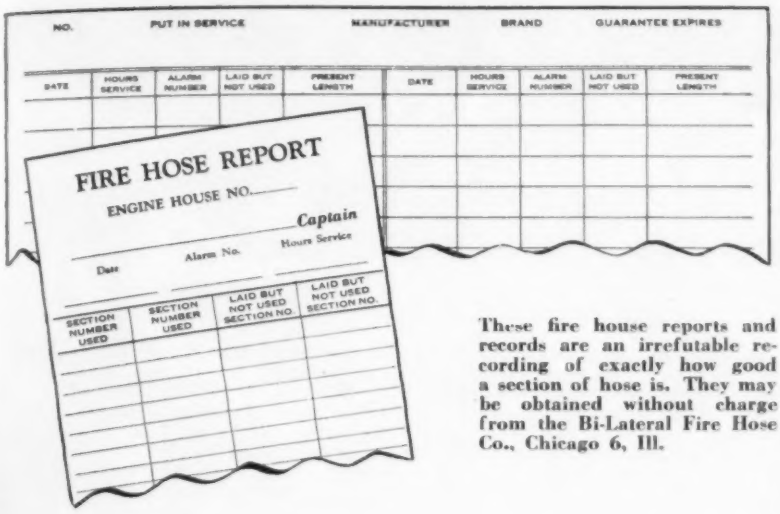
PITTSBURGH • DES MOINES STEEL CO.

Plants at PITTSBURGH, DES MOINES and SANTA CLARA

Sales Offices at:

PITTSBURGH	3412 Neville Island	DES MOINES	913 Tuttle Street
NEW YORK	Room 915, 270 Broadway	DALLAS	1217 Praetorian Building
CHICAGO	1216 First National Bank Building	SEATTLE	520 First Avenue, South
		SANTA CLARA, CAL.	619 Alviso Road

Keeping Accurate Tabs on Hose Wear

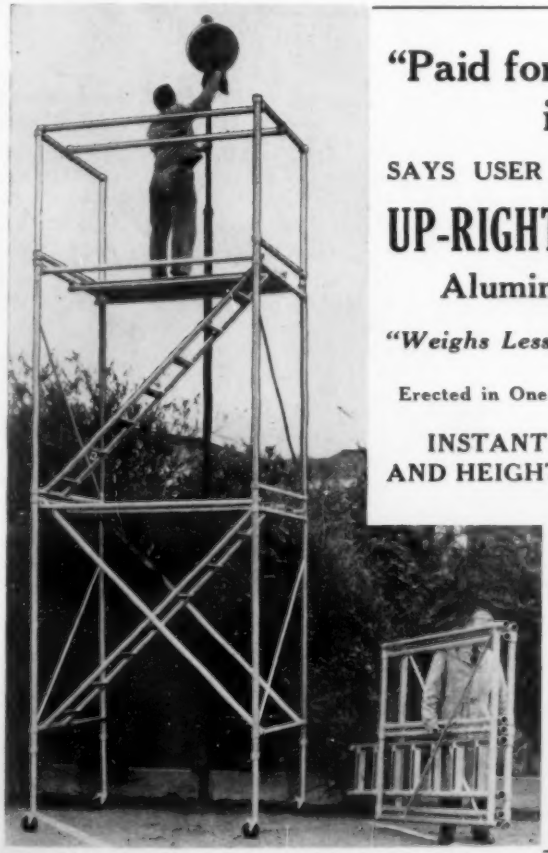


These fire house reports and records are an irrefutable recording of exactly how good a section of hose is. They may be obtained without charge from the Bi-Lateral Fire Hose Co., Chicago 6, Ill.

The accompanying forms are offered for use of all fire chiefs who desire to keep track of the service they get from their fire hose. They have been prepared from the records of progressive chiefs, which have been collected over a long period of years by Clay Baird, the father of Robert D. Baird, president of the Bi-Lateral Fire Hose Co., Chicago 6, Ill.

This record is very simple; each section of hose has its own number and when the firemen from House No. 7, for example, come back from a fire, the numbers of the sections used in this fire are called out before being hung in the tower. The figures are put on these fire-hose report pads. The sheet giving these different sections is sent to headquarters and the information transferred to an individual card for each section. In other words, each hose section has an individual card. All the information of each fire is transferred to this card so that after a number of years the chief knows exactly what each section of fire hose has been through, the number of times it was used, the condition in which it was used, what caused the hose to fail or why it was put out of service.

Keeping this record enables the chief to show conclusively whether or not cheap hose is cheap in the long run. In towns not keeping this record, although the chief believes cheap hose is really the most expensive kind, he has no way of proving it.



"Paid for itself in 6 weeks,"

SAYS USER R—— OF HIS

UP-RIGHT SCAFFOLD

Aluminum Alloy

"Weighs Less Than the User"

Erected in One Minute per Section

INSTANT LEVELLING AND HEIGHT ADJUSTMENT

No Loose Parts

Each Section Folds Flat

WRITE

for descriptive circular

UP-RIGHT SCAFFOLDS

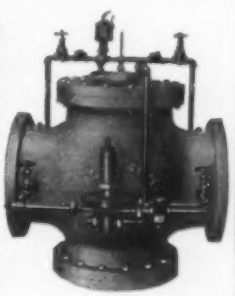
612 Bank of America Bldg.
Berkeley 4, California

ROSS

AUTOMATIC VALVES

Altitude Valves for tank and reservoir, with two sets of controls — Automatic Hydraulic and Electric Remote Control. Hydraulic pilot normally operates the valve, while electric pilot is used for emergency only.

Model 40-DAWR Double Acting Valve may be operated by electric pilot regardless of elevation of water in tank or reservoir, for a break in supply or distribution and when fire pressures require direct pumpage. Model 30-AWR Single Acting Valve may be controlled in same manner.



Model 40-AWR Single Acting semi-throttling valve will close on reversal of flow and the electric pilot would serve only a single purpose — either to open wide or close as emergency may require.

Established 1879

ROSS VALVE MFG. CO.
Incorporated
P.O. BOX 596, TROY, N.Y.

Para-Plastic

Reg. U. S. Pat. Off.

THE POSITIVE AND PERMANENT RUBBERIZED SEALING COMPOUND AND ITS COMPANION PRODUCTS

enable you to meet satisfactorily practically every condition ordinarily encountered in connection with water seal, vapor seal, expansion and contraction in heavy construction — road paving, bridges, dams, reservoirs, spillways, tunnels, sanitary works, airport paving, underground electric terminals.

Para-Plastic is a formula containing rubber and other chemicals, with its own particular and distinctive characteristics. It was created specifically because practical construction experience has shown that ordinary asphaltic or tar sealing compounds may fail during certain phases of the expansion and contraction cycles. This experience also clearly showed what characteristics a material must have in order to form a complete water seal all year around, at all temperatures.

Para-Plastic has those characteristics to an exceptional degree.

It is a rubbery, resilient, adhesive plastic which will adhere to steel, metal, wood, tile, glass, concrete and all forms of masonry. It is co-hesive, as well as adhesive, and is therefore self-healing.

It will not become brittle or hard at low temperatures. It remains resilient, adhesive and effective at temperatures from zero to 140° F., and in this range will maintain a positive bond, a continuous seal.

The use of Para-Plastic establishes a new and better art in the protection of expansion and contraction joints against water infiltration.

Since the material has entirely different characteristics, which have now been proven in thousands of miles of roads and hundreds of installations in other construction, it is important that the trades be properly educated in its use, so that the civil engineer and architect can make full use of this better art.

Rigid adherence to the detailed application instructions appearing on every Para-Plastic bag or package is essential.

In much of the standard paving work Para-Plastic is hot-poured in conformity with Federal Specification SS-F-336. For some special applications however, it is more practical to use pre-molded shapes of Para-Plastic which we design for each job. On all jobs which call for any kind of special application, we suggest you write us for a definite recommendation.

Para-Plastic is used in conjunction with various other products to form the complete joint structure, such as Servicised Kork-Pak which we recommend as the better filler.

SERVICISED QUALITY PRODUCTS © 1930

Write for literature and complete details on the other Servicised products which have been standard in this field since 1920.

SERVICISED PRODUCTS CORP.

6051 West 65th Street, Chicago 38, Ill.

Army Plane Rushes Dresser Coupling for Jet Fuel Emergency

When the United States Air Force at Langley Field, Va., needed an 8-inch Dresser coupling recently, they sent a C-47 transport plane to make the pick-up. The coupling was needed to repair a broken jet fuel line feeding storage tanks. Speed in repairing the service was essential. A telephoned order was placed with the Dresser Manufacturing Division of Bradford, Pa., and the big plane was dispatched immediately to the Bradford-McKeen County Airport near Bradford to pick up the coupling and transport it to Langley Field. Within a matter of hours, the feeder line had been repaired and tank cars of vital jet fuel were being unloaded to supply training and research demands.

Electric Typewriter Cuts Card Stencils

An electric card stencil typewriter is the latest addition to the electric typewriter line of International Business Machines Corp., 590 Madison Ave., New York 22, N. Y. The machine has a special carriage for holding and feeding card stencils and is also provided with a frame for holding a backing strip or roll to protect the platen from defacement, as well as a separate record-strip-roll holder which may be utilized to keep a carbon record of the stencils cut.

HERE'S SWIFT, SANITARY RUBBISH COLLECTION AT MINIMUM COSTS

Simplicity means efficiency. Efficiency means lower costs, and that's what you get with the Dempster-Dumpster System of bulk rubbish collection. Detachable truck bodies in the form of rubbish depositories are placed where needed to receive rubbish. A truck hoisting unit picks them up, in turn, hauls, dumps and returns them to the collection point. One hoisting unit serves any number of bodies, the equal of a whole fleet of trucks. Minimum outlay for personnel is assured because the driver alone handles entire operation. Above: Truck hoisting unit with Apartment Type Body in dumping position. Left (top to bottom): Tilt type, water tight, body with self-balancing lids; Pyramid type body with doors; Flat top body with self-balancing lids. Write today for complete information.

DEMPSTER DUMPSTER

318 Springdale
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DEMPSTER BROTHERS, INC.

CHEMCO
Equipment
FOR
EVERY CHLORINATION
AND
WATER CONDITIONING
PROBLEM

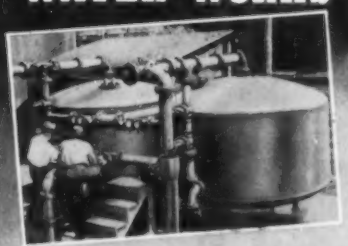
For Your
SEWAGE PLANT

CHEMCO CHLORINATORS are available for every type of installation. The above shows two CHEMCO 100# capacity chlorinator installed for the State of New York. Note use of Aqua-Thermal Coils.

For Your
SWIMMING POOL

CHEMCO has "Everything for the Swimming Pool" from the Filters to the Life Preservers.

For Your
WATER WORKS



A large Chemco Filter Plant installation for the Santa Fe Railroad, Winslow, Arizona. Consult CHEMCO first for your Chlorinator or Water Conditioning Problem.

CHEMICAL EQUIPMENT CO.
1700 NO. MAIN STREET
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Los Angeles 54, Calif.
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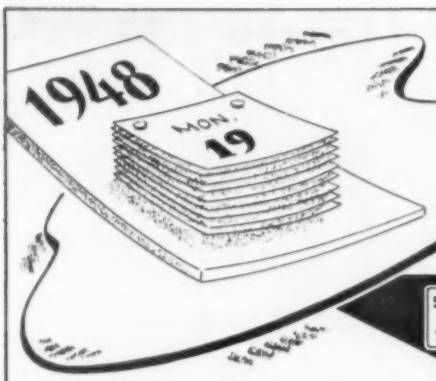
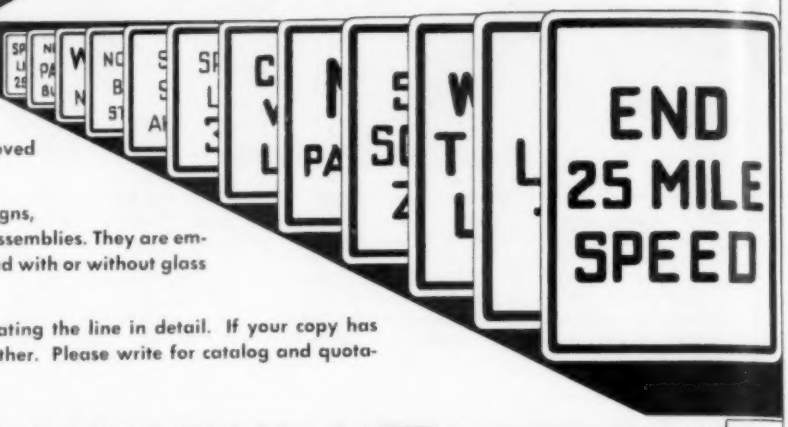
AGENTS IN PRINCIPAL CITIES



Signs OF THE TIMES



Start right. Sign right. Invest in improved traffic observance with proper signs.

Miro-Flex makes all standard traffic signs, highway marking signs and street name assemblies. They are embossed on Bonderized steel and may be had with or without glass or Lucite reflectors.

We have issued a complete catalog, illustrating the line in detail. If your copy has been mislaid, we will be glad to send another. Please write for catalog and quotations on standard or special orders.

MANUFACTURED BY

MIRO-FLEX CO., INC.

1824 EAST SECOND STREET · WICHITA, KANSAS

MARTIN **CARRYHAUL** TRAILERS

TRADE MARK REGISTERED

MARTIN CARRYHAUL TRAILERS
"Make Hauling A Pleasure!"

Ease of loading, dependability and economical operation are three Martin CARRYHAUL Trailer characteristics which make them the leaders in the field. Regardless of your hauling job, there's a proper size Martin CARRYHAUL Trailer to do it for you safely and economically.

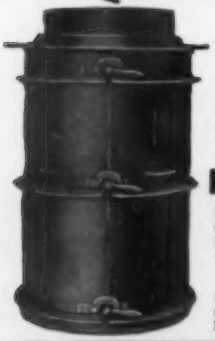
Your "CATERPILLAR" Dealer is your MARTIN Dealer. See him for your trailer needs.

MARTIN MACHINE COMPANY

KEWANEE, ILLINOIS

The "Quinn Standard"

FOR CONCRETE PIPE



The Quinn Standard is known as the best the world over, wherever concrete pipe is produced and used. Backed by over 30 years' service in the hands of hundreds of Quinn-educated contractors, municipal departments and pipe manufacturers who know from experience that **Quinn pipe forms and Quinn mixing formulas** combine to produce the finest concrete pipe at lowest cost.

Quinn Heavy Duty Pipe Forms

For making pipe by hand methods by either the wet or semi dry processes. Built to give more years of service—sizes for any diameter pipe from 12 to 84 inches—tongue and groove or bell and pipe—any length.

WRITE TODAY

Complete information, prices and estimates sent on request. Also manufacturers of Quinn Concrete Pipe Machines.

QUINN WIRE & IRON WORKS 1623 12th ST. BOONE, IA.

CHICAGO TANK & BRIDGE COMPANY

ROCKFORD, ILLINOIS

Elevated water storage tank reconditioning; machine or sand blast cleaning; painting, repair and general maintenance of all types water storage tanks and standpipes.

Rust preventive and rust inhibitive paints used.

Personal inspection by experienced tank men and free estimate cost upon request without obligation.

ALL WORK GUARANTEED BY PERFORMANCE BONDS.

ASK THE CITIES WHO USE OUR SERVICE.

List available upon request

CHICAGO TANK & BRIDGE COMPANY

618 Empire Building Rockford, Illinois

A Trailer-Type Leaf Collector

The Good Roads leaf collector, tractor-drawn, with a snowplow mounted on the tractor to help windrow the leaves.

The unit discharges a load of well-compressed leaves suitable for use for a mulch or compost.

One of the most recent mechanical contributions to the municipal field is a leaf collector developed by Good Roads Machinery Corporation, Minerva, Ohio. The unit is trailer-mounted and carries a gasoline-powered motor which operates a specially designed enclosed high-speed rotor that picks up the leaves and discharges them into a steel body with wire-mesh sides. The rotor intake is connected to a flat-mouthed funnel by means of a large flexible tube. The operator easily guides the flat-mouthed intake funnel by means of a rubber-tired handlebar frame. The unit may be drawn by either a tractor or a truck, The body has its own hydraulic dumping device.

The equipment has been tested publicly in the New Jersey, Pennsylvania, and the Washington, D. C., areas. About 600 officials from communities in those areas have seen the unit in operation and have expressed a keen interest in it. The machine demonstrated its ability to handle wet as well as dry leaves.

Stilson Moves Office

Alden E. Stilson & Associates, Ltd., consulting engineers, has moved its offices to larger quarters at 209 South High St., Columbus, Ohio. The company specializes in municipal and industrial design, surveys, and supervision in the fields of water, sewage, and waste disposal.

Scribner to Head Road Show Committee

Harvey A. Scribner, president of Russell T. Gray, Inc., Chicago industrial advertising agency, has been appointed chairman of the 1948 Road Show Promotion Committee by the American Road Builders' Association.

To be held in Chicago on July 16 to 24 at Soldiers Field, the show will include every type of equipment used in building and maintaining soil-stabilized roads, asphalt and concrete streets, highways, and airports. Among the exhibits will be various types of machinery in action; officials of manufacturing companies will be on hand to discuss individual needs and requirements. New developments in machinery and methods will be on display also.

Reports and addresses by outstanding authorities on types of highways and airport developments will be presented, in both bituminous and concrete work, as well as discussions on earth-moving, soil stabilization and compaction, street construction, maintenance, snow removal, the contract system versus day labor, and federal-aid relationships between states, cities, and counties.

CUT TALL GRASS... WEEDS...BRUSH
Faster and Easier

Ideal for water works, sewage plants, parks, playgrounds, airports, roadsides, vacant lots, tourist camps. Mows fast and clean around buildings, trees, and fences.

Very easy to handle on rough ground, steep slopes or hard to reach places. Cuts 1½" from ground. Does work of 8 men.

EASY TO LOAD

Light weight of JARI makes it easy for one man to load into truck or car trunk for quick moving. Rugged. Dependable.

WRITE TODAY FOR *FREE* FOLDER

JARI PRODUCTS, Inc.
2934-G Pillsbury Ave.
MINNEAPOLIS 8, MINNESOTA

FOR A *Good* CONNECTION

. . see the "Diamond Line"

The trade has long been familiar with McDonald's Diamond Line, and has come to depend on their high quality waterworks items for dependable, lasting service. You'll find it a good line to know . . . a good line to use . . . a good connection! Illustrated is a McDonald Copper Service Pipe Coupling with male iron pipe thread on one end and for Copper Service Pipe on the other. In ½, ¾, 1, 1¼, 1½ and 2 inch sizes. Also available are couplings with Female Iron Pipe Thread on one end, and couplings for Copper Service Pipe on both ends.

EST. 1899
McDonald

A. Y. McDONALD MFG. CO.
DUBUQUE, IOWA
BRASS GOODS • PUMPS • OIL EQUIPMENT

AUTOMATIC VOTING MACHINES

WERE USED BY 15,000,000 VOTERS
AT THE 1947 ELECTIONS

Among the 3,775 Progressive Cities and Towns Using Automatic Voting Machines are:

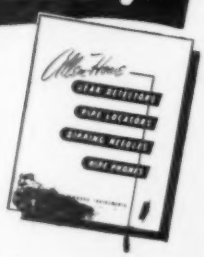
New York City	Dayton	Pittsfield	Oshkosh
Buffalo	Louisville	Brookline	Des Moines
Baltimore	Dallas	Jersey City	Atlanta
San Francisco	San Antonio	Newark	Miami
Philadelphia	Hartford	Detroit	Jacksonville
Harrisburg	New Haven	Grand Rapids	Indianapolis
Erie	St. Paul	Mobile	Seattle

If Your Community Is Interested in a More Efficient and Less Expensive Voting System—Write

AUTOMATIC VOTING MACHINE CORPORATION
JAMESTOWN 55, NEW YORK

Free PRECISION WATERWORKS INSTRUMENTS

NEW CATALOG!



LEAK DETECTORS
PIPE LOCATORS
DIPPING NEEDLES
PIPE PHONES

HOT OFF THE PRESS . . . the brand new catalog of precision waterworks instruments made by Allen-Howe. Complete description of each with specifications, photos and price list. Don't delay . . . this new catalog is FREE

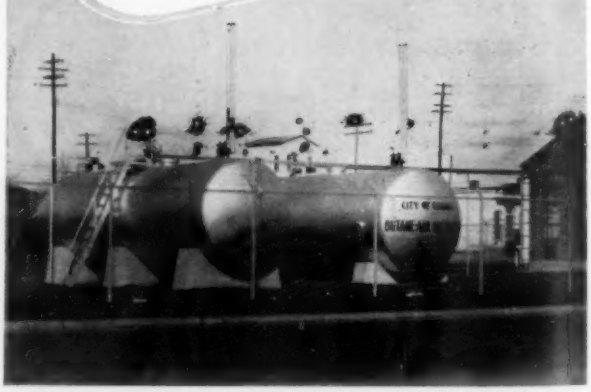
WRITE TODAY!

ALLEN-HOWE

PRECISION WATERWORKS INSTRUMENTS
ALLEN-HOWE ELECTRONICS CORP., PEABODY, MASSACHUSETTS

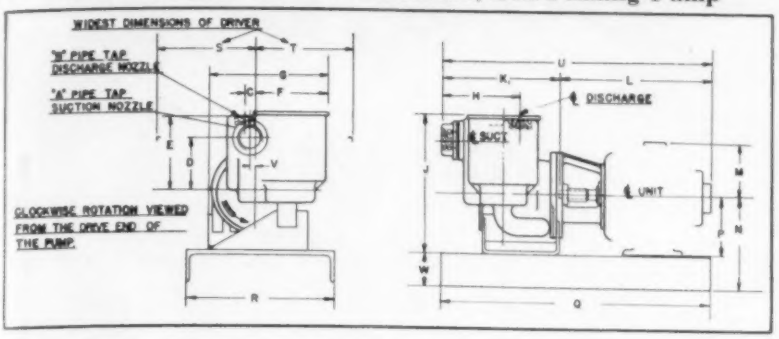
GAS STORAGE TANKS

We design, fabricate, and erect safe, dependable tanks for the economical storage of propane and butane gas; also tanks for consumer storage. In additon, we furnish industry with elevated tanks, boilers, and pressure vessels of all types. Our engineering department is at your service. Write for our catalog—"Tank Talk."



R.D. COLE MFG. CO. Newnan Ga. ESTABLISHED 1896

Allis-Chalmers Markets Automatic, Self-Priming Pump



This diagram shows the general arrangement of the close-coupled pump.

Allis-Chalmers, Milwaukee, Wis., announces an automatic, self-priming pump equipped with a new type of automatic spring valve which, the manufacturers claim, gives faster, smoother transition from priming or vacuum pumping to straight centrifugal action.

The pump is adaptable to any drive and is available in five sizes to cover various ranges and conditions. The pump is portable and installs rapidly.

Its quick priming features and the non-clog design of its open impeller types makes it a valuable tool in almost every type of municipal project. The company is offering a bulletin, at no charge, No. 08B6319B, which describes the pump in detail and includes illustrations.

John Bete with Fitzhenry-Guptill

The Fitzhenry-Guptill Co., Cambridge, Mass., has retained the services of John U. Bete.

John U. Bete

Mr. Bete has specialized in machine and product design and spray and hydraulic equipment. Fitzhenry - Guptill manufactures shade-tree sprayers and fire pumps.

BOROUGH MANAGER WANTED

The Borough Council of Lewistown, Penna., invites applications for the office of Borough Manager until January 31, 1948. Ordinance requires Manager to serve as Borough Engineer and to be a Registered Engineer or Surveyor in Pennsylvania. State education, experience and salary expected. Formal application blanks and additional information may be secured by addressing The Borough Secretary, Borough of Lewistown, Lewistown, Pennsylvania.

Freezing weather! Inadequate heating! These factors need not load up your meter shop with repair jobs. The frost bottom in American or Niagara water meters patented in 1921 and improved in 1938 prevents costly damage.

When ice forms in the meter and expansion takes place, the low cost bottom casting breaks, relieves pressure and allows all working parts including the gears to move with the ice. Damage is limited to the frost bottom. By replacing the bottom, on the spot, the meter is again ready for service.

The breaking point is carefully controlled and checked in advance by pressure tests at the factory.

The advantages of frost bottom meters are available to you at no extra cost.

Write for the full story on these meters that have become standard in many communities where temperatures drop below freezing.

AMERICAN BRONZE CASE NIAGARA GALV. IRON CASE

WATER METERS

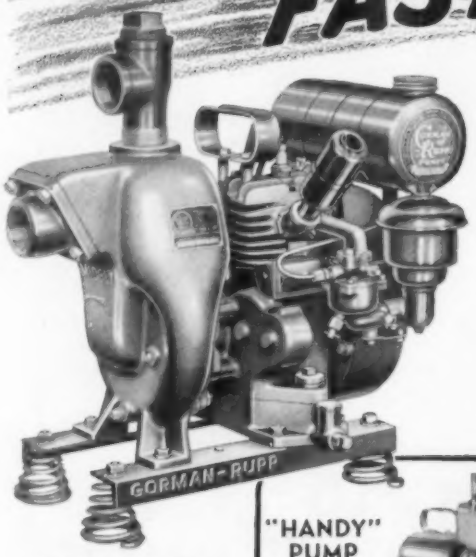
BUFFALO METER COMPANY

2902 MAIN STREET • BUFFALO 14, NEW YORK

Simplicity

FAST PRIMING *Lightweights*

. . . Pumps That Do The Job Quicker Easier and More Efficiently.



THE MIDGET

Weighs only 62 lbs. Pumps 5500 GPH at 5 ft. suction. Fast priming. Guaranteed to prime at 30 foot suction.

"HANDY" PUMP

Electric -- Self-Priming. Weighs only 20 lbs. Lifts up to 25 ft. Delivers 8 GPM at 40 lbs. pressure. (more at low lifts). Has hundreds of uses with pipe or common garden hose.

Gorman-Rupp Centrifugals are the fastest priming, most efficient pumps made -- just start the motor and you start the water without making any adjustments. They are practically trouble-free -- will not clog -- no valves, vents or orifices -- no clean out plates.

The Midget pictured here has a GUARANTEED SUCTION LIFT OF 30 FEET. It will actually pump 400 times its weight in water every hour at average heads. Less power, fuel and maintenance cost. Weighs only 62 pounds, carry it anywhere.

Whatever the job, from 1000 up to 125,000 GPH, you can do it better with a Gorman-Rupp Pump.

Write for information bulletins.

THE GORMAN-RUPP COMPANY
343 N. Bowman St., Mansfield, Ohio

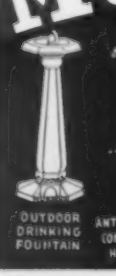
TO GET 'EM OUT ON TIME

YOU are the man we want to help. YOU are the man with whom we want to cooperate. WHEN will you need your 1948 requirements of MURDOCK Drinking Fountains and Hydrants?

Tell us. Specify date and quantity. The short supply of brass and bronze (not productive capacity) may delay delivery of "late" orders. Write right now.

The Murdock Mfg. & Sup. Company
426 Plum St. Cincinnati 2, Ohio

MURDOCK



OUTDOOR DRINKING FOUNTAINS
HYDRANTS
STREET WASHERS

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Prestressed Tanks	Steel Encasements
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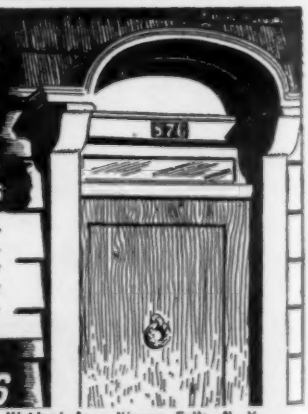
PROPER HOUSE NUMBERING

ADOPTED BY MUNICIPALITIES



Premax Stamped and Embossed Metal House Numbers have been generally approved because of their extreme legibility and permanence.

Premax Products
Div. Chisholm-Ryder Co., Inc., 4820 Highland Ave., Niagara Falls, N. Y.

Factory Managers Appointed by Caterpillar

← Lloyd J. Ely

A. W. Johnson →

← John Elwood

Factory managers for the diesel-engine, diesel track-type tractor, and earthmoving-equipment factories of the Caterpillar Tractor Co., Peoria, Ill., have been announced by James R. Munro, general factory manager.

The promotions are keyed to the company's expansion of its existing manufacturing facilities, emphasizing the development of a complete "package" of prime movers and earthmoving tools, three of which are shown on the front cover of this issue.

Lloyd J. Ely, who has held the position of factory manager, will head the diesel-engine factory, which is now under construction and scheduled for occupancy and partial operation this year. John Elwood is moving up from a position as assistant factory manager to one that entails complete charge of all diesel track-type tractor production; Arthur W. Johnson becomes factory manager for earthmoving products and the final assembly of bulldozers, scrapers, and rippers.

Underground Pipe Protection

A pipe protection that insures long pipeline service under adverse soil conditions can be provided by Fiberglas Underground Pipe Wrap, according to the manufacturers, Owens-Corning Fiberglas Corp., Toledo 1, Ohio.

Fiberglas Underground Pipe Wrap is being applied successfully with pipeline enamel, water works enamel, and various types and brands of asphalt and petroleum coatings. It is used with these coatings in a number of ways: as a single coat and wrap, as a double coat and wrap, or as a single coat with a double wrap.

Studies by an independent testing authority who tested pipe covered with Fiberglas Mat have shown its efficiency. The Owens-Corning Corporation will supply the results of the test upon request. This corporation also distributes a bulletin giving further details on the pipe wrap.

Walter Snow Fighter *for sale*

Immediate delivery:

1 Walter Snow Fighter, Model FGRS, fully equipped with Model 130-SB full Hydraulic-controlled Snow Plow and Model 7Y-2AP Humphrey Sand Spreader, 6-yd. capacity, power-driven by Wisconsin Motor.

Address inquiries to
Vice President & General Manager,
Worcester Street Railway Company,
107 Front Street
Worcester, Massachusetts
or phone
Worcester 6-3602

LOOK INTO THAT PIPE

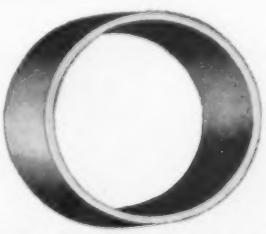
to increase water pressure

When pumping costs rise, pressures fall, and capacity goes down—it's a sign of clogged water pipes.

Many a pipe, assumed to be in good operating condition, is actually delivering less than half of its normal capacity. It pays to investigate.

The highly specialized methods and equipment of the National Water Main Cleaning Co., developed over a period of more than 40 years, enable us to clean any main thoroughly and economically with but little interruption to service.

Cleaned by National



NATIONAL WATER MAIN CLEANING COMPANY

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HOUSTON	2518 Grant Street	MONTREAL	2028 Union Avenue
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OMAHA	3812 Castellar Street	HAVANA - MAYAGUEZ, PUERTO RICO - BOGOTA	
RICHMOND	210 East Franklin Street	CARACAS	MEXICO CITY

4-Axle, 12-Wheel Chassis For Cranes, Winches

A new truck chassis designed for maximum stability is being marketed by the Milford Crane & Machine Co., Milford, Conn. This 4-axle, 12-wheel framework for mounting a crane or winch is designed for maximum dynamic balance, unit efficiency, and load capacity. The dirigible duplex 2-front axle system and the two rear axles take care of both balance and adequate load-carrying capacity. The double front axles also add an element of safety in the reduction of shock overloads.

The Milford Special Service Truck equipped with a crane.

The dual-service cab was designed for the efficient operation of cranes, winches, and the other auxiliary equipment which is usually in back of the driver. The seat in the cab completely reverses, so that all operations can be performed under conditions of full visibility and safety. When the operator is driving, he faces front; when he is operating the equipment in back of him, he turns around in the cab seat—still facing front.

Correct Procedure For Hydrant Inspection

The National Board of Fire Underwriters, Committee of Fire Prevention and Engineering Standards, 85 John St., New York 7, N. Y., has issued a paper giving its suggested method of inspecting and testing fire hydrants.

Bulletin No. 248 describes an efficient procedure for the determination of obstructions to hydrants; flushing, pressure, and leak tests; oiling and repair methods, and recommended procedure for hydrants with waste valves in ground water.

Homer A. Hunter Enters Private Practice

Homer A. Hunter, city manager of Lubbock, Texas, for the past two years, resigned from this position and has entered private practice offering a consulting service for Texas cities in the fields of engineering, operation, planning, and management consultation, with offices located in Dallas, Texas.

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PIPE RECONDITIONING PROGRAMS

fit into the MUNICIPAL BUDGET!

2,500,000 Feet Coated in 10 Years

LECTUMEN COATING

FOR WATER MAINS 3"-24" I.D.

- PROLONGS LIFE OF SMALL WATER MAINS
- RESTORES FULL CAPACITY
- MAINTAINS HIGH VOLUME
- ELIMINATES RED WATER
- PRESERVES EQUITY OF WATER MAIN INVESTMENT

More and more municipalities are learning why Pittsburgh-Eric Process is successfully combating the present-day high cost of pipe replacement. Because Pittsburgh-Eric Process combines skilled pipe cleaning technique with an effective method of lining small mains electrolytically to restore old, incrustated and tuberculated pipe to full flow capacity at LOW OVER-ALL COST! Many additional years of service from existing mains, lower pumping pressure, better fire protection, and the postponement of capital expenditure are factors that make a Pittsburgh-Eric Pipe Reconditioning Program a "must" for water distribution systems. Get the full details from our nearest branch *Today!*

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GENERAL LIBRARY
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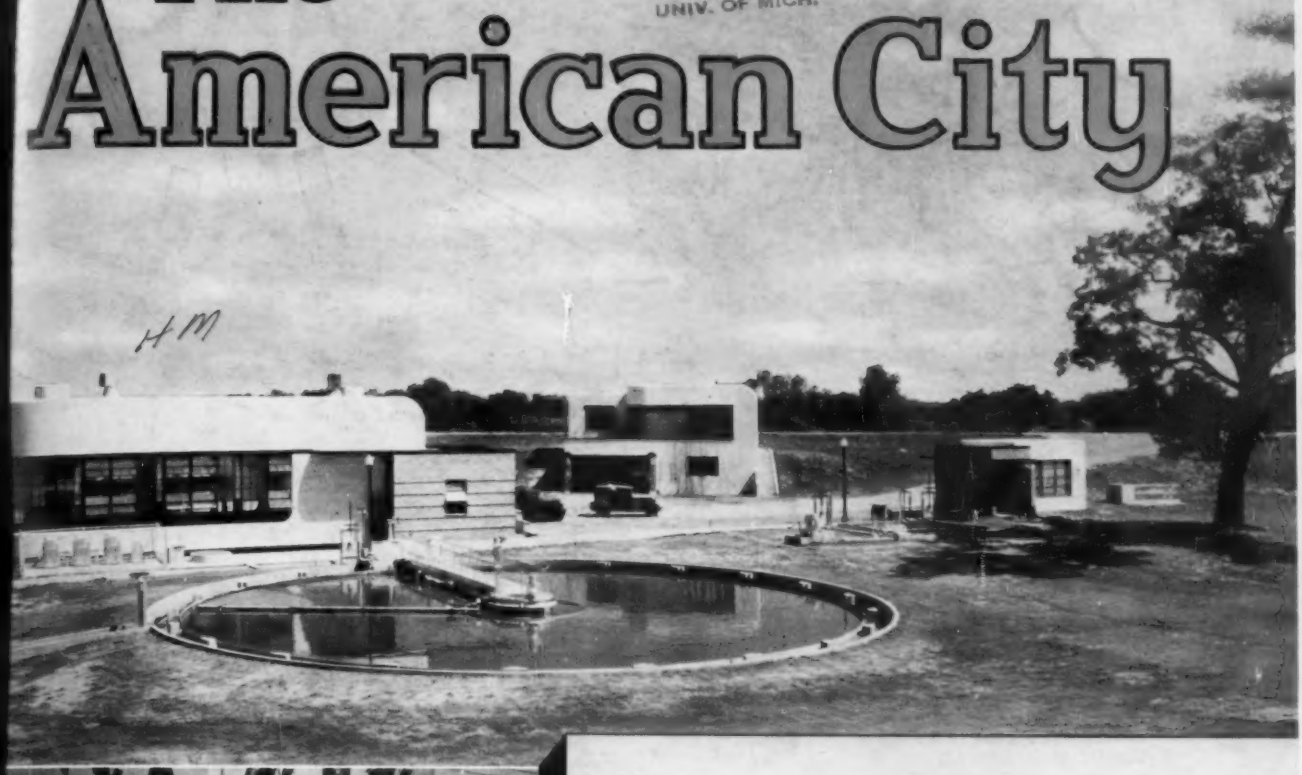
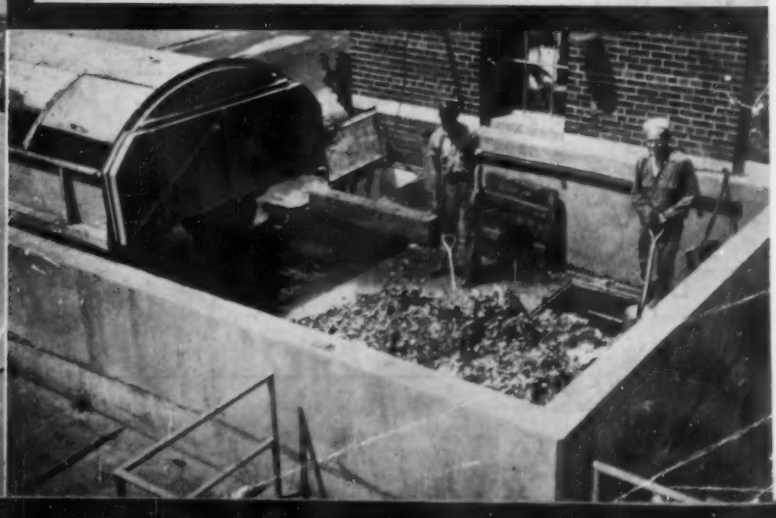
The American City



WHAT effect does the practice of grinding garbage and introducing it into the sewerage system have on the city's sewage treatment plant? What differences are encountered when the grinder is in the kitchen sink (left) instead of a central station (below)? The article on pages 85-87 of this issue gives some of the answers to these questions.